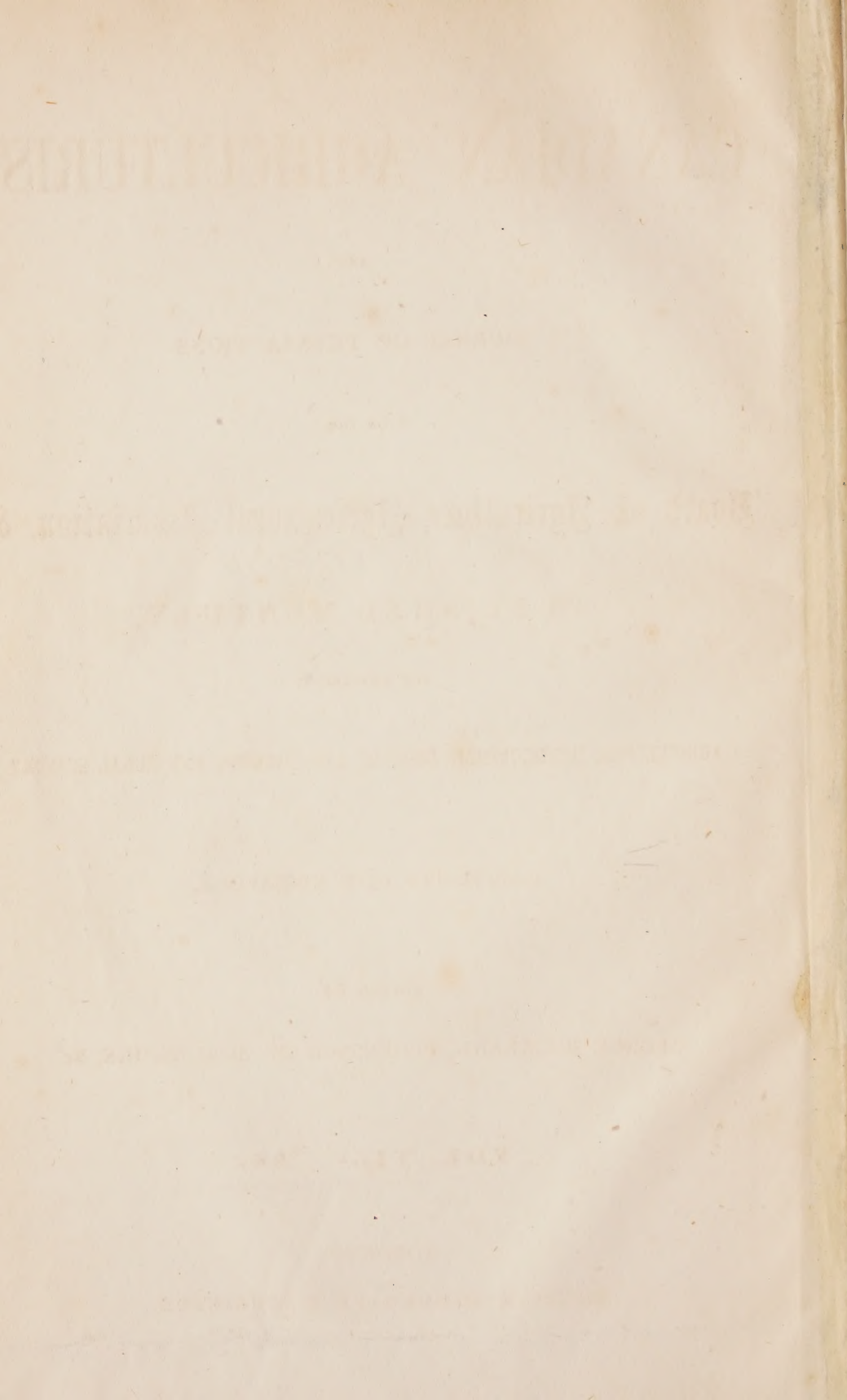


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EDITED BY

GEORGE BUCKLAND, PROFESSOR OF AGRICULTURE, &c.

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VOL. VI.

TORONTO, JANUARY, 1854.

No. 1.

Reports, Discussions, &c.

EAST ZORRA FARMERS' CLUB.

REPORT OF THE FIRST MEETING OF THE EAST ZORRA FARMERS' CLUB, HELD AT LAPPIN'S HOTEL, 12TH LINE, DECEMBER 8TH.

Present—Messrs. Joseph Turner, *Chairman*, Joseph Swaites, Isaac Cook, J. Smith, A. H. Farmer, *Secretary*. *Committee*—Messrs. John B. Wilkison, Griffiths, Dale, G. Smith, H. Shadwicke, Trapett, H. Stewart, Fox, Robinson, Kennedy, and about twenty others.

After some excellent prefatory remarks the chairman pointed out the difference between good and bad farming, and the management of some men, as contrasted with that of others, careless and slovenly. He enumerated the advantages of shelter for cattle, and the strong necessity for providing sheds for them, even if they were only log sheds. How often, said he, do we see cattle starving out in the fields, utterly destitute of shelter, and the very hogs cringing round the door of the house, as if searching for the warmth and shelter so cruelly denied them; any night might provide something, but somehow or other we always say, "oh, I must get something ready next summer," and so it goes on from year to year. I recollect a story of a farmer's son who was sent to the mill in cold weather, and being observed by a passer by, bitterly crying from the cold, was advised to walk; no, said he, my father always rides, and I will ride, if I should die for it. We are all strongly attached to early

associations, and as our fathers did, so we like to do, and unfortunately are too fond of extending our prejudices to our farming. All, however, can afford to house and shelter in some way or other, and it is our duty to do so, for animals were given for us to use, not to abuse. In the beginning of winter many men waste their fodder, and hay and straw stacks are exposed to the weather, with their tops taken off for feeding, allowing rain and snow to penetrate to their very heart, and all for the saving of a dollar for a hay knife, which would cut snugly and well, leaving the top undisturbed. And then we ought to take care of our implements, a thing generally overlooked, a little arranging and putting away, a little cleaning and painting, and they will be ready for another summer's use; even the harness should not be overlooked, but looked over and oiled at intervals, for "a stitch in time saves nine," and never more so than in such cases. I shall now conclude my remarks, but I trust all who are here will aid in the discussion.

A. HAMILTON FARMER, Esq., *Secretary*, then read the following Paper on the Housing and Feeding of Stock:

Having been requested to open the proceedings of this meeting with a paper on the Housing and Feeding of Stock, I agreed to do so to the best of my ability, though I naturally feel great reluctance in placing my views on the subject before so many men, well qualified from length of existence and practical skill, to undertake the



duty. Some one, however, has to break the ice, and I will do my best to do the subject justice, availing myself freely of the experience and discoveries of others where it may seem necessary.

The subject is one of paramount importance to the farmer, and this season of the year is, of all others, the most appropriate for its introduction: the commencement of winter being the time when advice given and remarks made would be of most benefit.

First in order of discussion stands the housing of animals. We all know, or at least ought to know, the great advantage there is in properly housing stock, but perhaps the true reason for the necessity of so doing is not known to every one; it is this:—The air we breathe is composed of two gases, oxygen and nitrogen, in the proportion of 20 per cent of the former, and 79 per cent of the latter, in bulk. When inhaled, the oxygen enters into combination with the carbon with the blood, and is given off in the form of carbonic acid gas,—a portion of it also combines with hydrogen gas in the system, and is given off in the vapor of water. Now, as the carbon and hydrogen are supplied by the food, it is obvious that increased respiration requires an increase of food to supply the waste, which is the reason a fattening animal should not be allowed to take exercise. The combination of oxygen and carbon is attended by the production of heat, and it is this that produces the heat of the animal frame. Cold weather therefore acts in two ways; it first of all, on account of the increased quantity of respiration, creates a demand for an increased quantity of food, which is consumed and burnt up in the animal furnace, as it were; and it also more rapidly abstracts the heat caused thereby from the frame, calling again in another way for a greater increase of food, to supply the heat. It follows therefore, as a matter of course, that the less waste of food there is produced by increased respiration and cold, the more will be enabled to remain, and add to, the system. Upon this great yet simple fact, rests the necessity, the imperious necessity, of providing suitable accommodation for cattle in winter, with the view of economising food, some instances of the efficacy of which I may perhaps allow myself frequently to quote. As regards the humanity of providing shelter for cattle, and the difference in the feelings produced by the sight of stock under cover, when contrasted with those in the open air, in a snow storm, I do not fear any opponent. We have therefore to consider at present the most economical and perfect way of sheltering cattle from the effects of the weather, so as to ensure their maintaining a healthy and growing condition on the smallest possible portion of food. It is, in the present state of the pocket of farmers in general, difficult to provide shelter perfectly enclosed from the effects of wind and weather for each animal, yet I would submit that the nearer our barnyards approach to this state, the more flourishing and healthy will be our stock, and that the wretched condition of much of our Canadian cattle is owing to the system of starvation and exposure being so ruthlessly pursued as it is in many places. The first thing that suggests itself is a log shed, which is

most easily obtained. A little labor in the woods cutting logs, a few neighbors to assist in rolling them up six or seven feet high, a few rails and a little pea or other straw for thatch and to chink the logs with, and you have at all events some shelter for your cattle. Six men with a yoke or two of cattle would build such a shed in a day, and the labor would be most amply repaid. But I hope we would possess more ambition than to be content entirely with such edifices, useful as they may be as temporary substitutes for better things, so we will turn our attention to the more regular and artistic style of building, viz: Frame, for bricks are unfortunately as yet unattainable, however desirable they may be. How often do we see barns standing by themselves, or at least with a shed or two just projecting from one end, as if it were necessary to have it as far from the barn as possible; is it not much better to use the barn as one of the sides of the shed, the double thickness of the walls thus assisting in a great measure in preventing draughts of wind from rushing through the shed, for frame sheds are but draughty places of rest for cattle, unless the joints are carefully battened. A shed built against one side of the barn and divided into three partitions, in the centre one of which would open the large doors of the barn, would hold a great deal of stock. On one side might stand the cows (for cows ought always to be kept separate from the rest of the stock), on the other the oxen and grown up male animals, in the centre young ones. Sheep and hogs should have a separate place provided for them, as their offensive smell might be injurious to cows in calf. Another style of building I would recommend would be a double-storied barn, which would be particularly applicable when a slope of the ground existed, which would serve as gangway to the upper part; but even without it, the principle might be applied. I would proceed after this fashion: having chosen a place at the foot of a declivity, I would proceed to clear out a place for the foundations of the barn, in such a way that when the foundations are built, (it would not do to have them less than 8 feet high, they would be better 9 feet,) the top of them would be in one place on a level with the ground. The foundations should be built of stone, well put together, and should form three sides of the square, the south side being left open; upon which foundations I would place my barns; the frame of which would of course differ in size, &c., according to what was required of it. The floor would be well laid with two inch plank, so as to prevent anything from falling through upon the cattle below, which would of course be fed from above through openings made for that purpose. The lower part would be appropriated to cattle, of course, and very warm they would be with solid stone on three sides of them; indeed, the fourth might be made to close up when required, when they would be comfortable indeed. A corner could be built up as a root-house, to be filled from above, but with a door in the side, for convenience in taking the roots out. The upper floor would be approached from the sloping bank, and be used as barns generally are, viz.:—hay-barn,

granary, thrashing floor, implement room, &c. The advantage of this plan would be that under the same roof you would get double room, merely at the cost of the foundation; which, although it would be an expensive thing, would at the same time make the barn indestructible by rot or old age, which two evils seem to destroy all barns most rapidly. The same plan might be carried out with the pigs and sheep; a double storied house would contain the pigs below and the sheep above; the upper part might be approached by a sloping gangway, which sheep would readily learn to ascend. There would be a necessity however, in that case, for a very carefully laid floor, to prevent the drippings of the sheep falling on the hogs beneath. While writing this I was informed such buildings are in use among the Germans in the North, which is to my mind a great recommendation of their utility.

Of the style of building in the Old Country I need say but little, for, however desirable, it is not likely to be carried into effect as yet on a large scale. Hay barn, straw barn, threshing barn, all separate, with the accompanying steam engine, long rows of stables for tying up cattle, sheep sheds, cowhouses, pigstyes, &c., all of the most approved and substantial quality, are far beyond our reach, though, as the utility of them has been proved there, we may be sure the nearer we approach to them the better it will be for us. One great argument for keeping all stock under cover is the superior quality of the manure made in that way. That made in open yards, exposed to all the vicissitudes of the weather, now burnt with the sun, now drenched with rain, and now covered inches deep with snow, is washed out till it no more resembles the real stuff than some of the whiskey bought at small retail dealers resembles the pure spirit, and much of this must be applied to the land before any benefit can be derived from it. On the other hand, how superior in strength and quality is the manure made under cover, without a drop of extraneous wet touching it. In that case the straw is able to hold the liquid manure made, it not being saturated with rain and snow, and retains its full strength till required for the land. In this country there seems no danger of the manure becoming what is termed "firefanged," a result which occurs in the Old Country when it is kept too dry, and allowed to heat. The cold here seems to prevent its rising to a temperature sufficient to burn it, and consequently destroy its valuable qualities.

We will pause for a moment to see if we can ascertain the exact amount (as nearly as possible) of the manure wasted by its being made in the open air. If the straw be loaded with rain or snow, of course it is unable to absorb the liquid manure made by the animals, which runs off either at the time, or on the next shower of rain, bearing with it part of the strength of the solid manure as well; that, however, we will not take into consideration, but merely turn our attention to the amount of fertilizing properties running out of the dungheap from the liquid manure. The cow is supposed to void in the course of the year 13,000lbs. of urine, containing 900lbs. of solid substance, which is more fertilizing than even

the far famed guano, as it contains about 25 per cent. of ammonia, whilst guano contains only from 13 to 15 per cent. Now, supposing she spends four months in the yard, the amount that ought to be collected would be 3000lbs., all of which is lost in open yards, as it dribbles out to the lower side of the barn, where the trampling of cattle and its too great strength prevents all grass from growing. Suppose, then, a man keeps four cows, two oxen, and half-a-dozen other animals of the kind, by no means a large stock, he wastes 3,600lbs.—32 cwt.—of the most valuable manure. Now, upon a careful collection and average of all experiments I can discover, 1 cwt. of guano will produce about three tons of turnips, nearly two tons of potatoes, about one ton of hay, eight or nine bushels of oats. On other crops I cannot discover a set of experiments to deduce an average from, but, as a general rule, I think one may state 3 cwt. of guano upon land otherwise well treated to be equal to 20 loads of farmyard dung, therefore the 32 cwt. of dried urine wasted are equal to 200 loads of dung, worth at least £10, not to mention the difference between hauling out one load of 32 cwt., and 200 loads of dung, which I anticipate would take a fortnight at least, and thereby add some £6 more to the chapter of expenses. Now, a shed to shelter that number of stock can be built for about £20, so that in two years or less the expense of erecting the shed would have been defrayed, and the shed itself would stand ready for a continuation of the system.

We will now, having comfortably (in imagination at least) housed our stock, and seen them protected from snow and rain, proceed to feed them in such a way as to derive the greatest possible benefit from the smallest quantity of food. This is a portion of the subject which most forcibly reminds me of my inability to do justice to it, but I will proceed to handle it, supported by the best authority I can produce. Our working cattle will, of course, be fed upon oat straw, with a handful of oats when they are at hard work, for though oat straw is a most valuable article of food, it requires some assistance to keep up the strength when much called upon; a few roots also, when they can be obtained, are of great service to them, as any one will see who takes the trouble to give them; but roots for working cattle in any quantity are hard to obtain as yet. We may, however, be fearless as to their well-doing if properly supplied with oats, and perhaps a little coarse hay, when at work.

The cows, when a good stock is required, demand the most of our attention and care, particularly as the time for calving approaches, when they have to be carefully fed beforehand, for fear of their getting too fat, and so endangering their lives whilst calving, and well fed afterwards, so as to produce the greatest attainable quantity of milk. It may seem absurd to be careful about over-feeding cows before calving, and with many I have seen I should think it impossible, but all who have bred good cattle will feel that I have said nothing but what is very necessary. Cows can be fed to great advantage upon hay and straw cut up in a chaff-cutter, and mixed together, as-



sisted by a good meal of roots in the course of the day, and a few oats might be added by those who wish to keep them very high. Cut hay and straw mixed have been found to answer as well as hay by itself, and the saving is of course the difference between the price of hay and straw, on one half of the feed. The chaff-cutter should be on a good principle, so that the money saved in the hay be not lost in cutting the chaff, for that would be but a bad way of improving oneself; it would be much better were it fixed to a horse-power, in which case a few hours with one horse would cut enough to last a moderate quantity of cattle for a week. Indeed, all hay and straw should be cut up before being fed to any animal, as well as straw cut into four or six inch lengths for litter, so that green manure would plough in easily. But as labor is dear, and food cheap in comparison, it would not do to run hastily into the expense of machinery, when the cost of the food saved might not perhaps counterbalance the expense. It is certain, however, that a horse-power for one or two horses would be of great service on a farm, for not only would it be of use in cutting chaff, but it might turn a small threshing machine, and perhaps a circular saw and many other articles that are of use to a farmer. I intend myself to use my horse-power, (a two horse, fitted for three,) for many purposes besides driving the threshing machine it properly belongs to. It has also been shown that hot salt-water sprinkled over cut straw alone makes it much more palatable to stock, and if to each bucketful of water about half a pound of linseed meal be added the food will be greatly improved at a very slight additional expense, as linseed meal can be purchased at about \$5½ a hundred, the object being to make the animal consume enough straw to keep it thriving; it being nutritious to a certain extent, and also assisting to fill the stomach out, which is absolutely necessary for ruminants, a large quantity of poor food being more useful to them than the same in a more concentrated form. I need hardly quote a higher class of mixture for cattle, but one seems so simple in all cases where farmers feel inclined to buy a little to increase the quantity of manure, and consequent fertility of the land, that I cannot help mentioning it.

"Into a copper pour six pails of water, and let it boil, sprinkle into it one pail of linseed meal,—another person meanwhile stirring it. In five minutes the mucilage being formed,—a tub is placed near the copper,—throw into the tub a basket of turnip tops, besides chaff or cut straw, upon which pour three or four quarts of mucilage, stir with a manure fork; other turnip tops, &c., are then added, and mucilage, and well incorporated. It is then pressed down as firmly as possible, and covered with a thick cloth or cover. In three hours the straw will have absorbed the mucilage, and the turnip tops been partially cooked, it is then ready for use."

Such a mixture will keep good for many hours, and of course can be made in quantities to suit. The tops also of turnips, carrots, mangel wurzel, &c., in many countries are put by in brick pits, with a good allowance of salt, for winter and spring feed; they ferment and form a pasty mass,

which is devoured with great avidity by cattle. As regards the roots themselves, it has been shown that for fattening beasts, 80lbs. of turnips, cut up and fed with a good allowance of straw, is as good as 200lbs. given otherwise, and in fact beyond a certain amount the principal office they perform seems to be to slake the thirst, which, seeing all roots contain from 80 to 90 per cent. of water, they are eminently calculated to do. Great advantages would be reaped also if the plan of tying up cattle when feeding were pursued, for then every beast would have his own share of food and no more, and the master animals would be confined to one spot, and instead of chasing the weaker ones round the yard in their jealous anxiety to get all the food themselves, and thus not only preventing others from feeding but feeding themselves at a great disadvantage, they would be able to take each his own food comfortably and quietly without interference from any other animal. This plan would be of advantage with the cows in particular, being now all in calf they are less able to bear the driving about, and the weaker ones, which want the more peace and food to help them to bring a good calf, would thus get it. I find a common trace chain, with a long hook put on the link end by the blacksmith, to hook round the neck, and a staple driven into the post or beam to hook the smaller hook into, so that it may be removed, or drawn up shorter, at will;—a most efficient article, at the cost of some 1s. 3d. or 1s. 6d.

When attempts are made to feed cattle, regularity is one of the cardinal virtues; for it is notorious that a little given carefully at stated times, is much better than a great deal given irregularly and wastefully. As a proof of the superiority of tying up cattle when feeding them, it has been shown that oxen fed loose in a yard, eat or spoil enough to keep twelve oxen when tied up.

As regards feeding sheep, it is with us a very simple operation. Pea straw seems quite as agreeable to them as hay, and they get their regular allowance either of one or the other three times a day, with roots in the spring, especially for the purpose of increasing the flow of milk in the ewes. It would be better for them too, were their food cut up and fed to them in troughs, for they are clean feeding animals, and never like to eat what has been trampled under foot, and as they pull their hay about and snatch it one from the other, much of it must be wasted. For fattening sheep in the winter, a pint of oats or grain of some kind is requisite, per day, and half a pound of oil-cake would be of advantage also, particularly in enriching the manure. Keeping them close and warm would also assist, as I will now proceed to show.

A Mr. Childers selected two lots of Leicester yearling wethers, of 20 in each; one was placed under shelter in a yard, the other folded in the field. They all received the same food, viz: 12 lbs. cut turnips, as many as they could eat, half a pound of linseed cake, half a pint of barley, a little hay, and salt per day, for each sheep. At first they each ate about 19 lbs. of turnips a day, but after three weeks, those in the shed eat 2 lbs. a piece less, and in the 9th week, 2 lbs. a



piece less again, and of the linseed cake there was a falling off also, of nearly one-third of the amount given, viz: 13, 3 lbs. a day from the lot. Those in the field consumed the same quantity from first to last. The respective weights of the two lots were as follows:—

	In the shed.		In the field.	
	stones.	lbs.	sts.	lbs.
Jan. 1st. 183	3	.....	184	4
April 1st. 239	9	.....	220	12
Gain	56	6	36	8

The gain of the shed fed sheep over the field fed, was 19 stones 12 lbs., consequently the sheep in the shed, though they consumed nearly one-fifth less food, made above one-third more progress.

In another experiment of three lots; one entirely covered in, one under a shed in the yard, and one entirely exposed, all of them having a pint of oats a day a piece; the first consumed on an average between Nov. 18 of one year, and March 9th of the following, 8 lbs. of cut turnips and other roots per day, and increased in live weight 23½ lbs. per sheep; the second consumed 11 lbs. of the same food, and increased in weight 25 lbs.; the third consumed 17 lbs. of cut turnips per day, each, and increased 23 lbs. live weight in that time. The several lots, it thus appears, did not differ so much in their growth as in the case reported by Mr. Childers, but there was a much greater difference in the quantity of food eaten by them. These experiments would tend to an assumption that twice as many sheep can be kept upon the food, under perfect shelter, than when entirely exposed. It is also a favorite plan to feed sheep each tied up in his own little stall (but this of course can be applied only to fattening sheep) with grated floor for the dung to fall through into a receptacle beneath, when 16 or 18 lbs. of cut Swedes, one pint of oats, and half a pound of barley straw cut into chaff and salted, per day, has been known to make upon good sheep, upwards of 3 lbs. live weight a week.—The foregoing experiments, to which, I have no doubt it were easy to add many others, are a strong proof of the necessity for procuring shelter for sheep, to that extent at least that they can live dry.

As to the keep of young horses or horses of any kind when not worked, we have but to provide them a good shed, with plenty of room, both inside and out, for exercise, as it is bad to cram them. They can be kept well on hay alone, without any additional food. I myself once kept a pair of brood mares a whole winter upon hay and straw, in equal proportions, cut into chaff, and so well did they look, that when I next have horses loose in the winter, I intend to feed them in the same way. The subject does not include the keeping of working horses, so I shall leave that, and do so the more willingly for fear of protracting my paper to too great a length.

I need scarcely mention the subject of pigs, for they nestle any where in the straw, and pick up the leavings of other beasts, with very little help. It is, however, a subject of debate, as to whether pigs would not do better when fattened

from their births, and killed at from nine to ten months old, than when allowed to run. So advocates of the system say with much apparent reason, that they do not consume so much food in proportion, when treated in this way, than when allowed to run for a year or so, before being fattened, and though they naturally do not come to such great weights, the money is turned over quicker. I have pursued the plan myself with spring pigs, and find it certainly produces the best and juiciest of bacon. Before I leave the subject however, I will let you into a secret for fattening pigs, namely, feed them on bacon, a pound or a pound and a half of fat bacon is enough, and it is said, produces wonderful effects. Three pigs fattened in this way rose 15, 14, and 19 lbs. respectively in one week.

It is well known that greaves, which is nothing but the refuse of the tallow chandler's carrion has a great effect in fattening animals, but only fancy feeding pigs on their own kind.

I will now conclude my paper by expressing my great regret that some one was not selected for the duty, more qualified to perform it than I am. When 20 years more have passed over my head, and I have tried some 20 different ways of feeding animals, I shall then be able to pronounce, with much more certainty, on the value of certain articles of food, as it is, I am as yet sorely ignorant on the subject. I might have enlarged in many different ways as it was, but I kept steady to the point, that my paper was for practical farmers in Canada, where certain sorts of food, and certain classes of building, are attainable, and, as yet, no other; when, however, the time comes for more extended operations, and we have a greater choice of materials to work upon, I hope the long continuance of this club will give me many opportunities of expressing my views on the subject.

After the reading of the above address the Chairman called upon Mr. Isaac Cooke.

Mr. COOKE considered the first point in wintering cattle was to attend to the land, and grow enough to feed them well in the winter. He recommended bran and shorts as excellent food for young and growing stock, the use of which would greatly assist in raising their condition. He traded last winter 1½ ton of hay with a miller for bran and shorts, and he found that his wife got half as much butter again from the use of them, and that of much better quality, his cows kept in much better order and his calves in the spring were worth some \$10 a-piece, instead of three or four. Money laid out in the fall in this way, was repaid with interest in the spring, and if farmers would act upon this plan, they would soon have some golden sovereigns jingling in their pockets.

Mr. JOHN SMITH did not wish to speak, but could not refuse when called upon. He, agreed with Mr. Cooke as to the advantage of farming well, and having therefore plenty of food for stock, which ought to enjoy a good belly feed. Strawcutters he thought were good things, and he had seen them much used, but he thought they made a great deal of labour, when fixed

however to a horse power they would naturally be much better.

Comfortable accommodation was required for all cattle, but more especially for cows and ewes, but providing it certainly demanded a great outlay. He endeavoured to provide it as much as possible, but coming on to a new farm, and being very short handed, had hitherto prevented the entire accomplishment of his plans. The proper care and plenty of food, however, he gave them to the best of his power. He always fed his cows on hay, which some denied to theirs. He had seen some men hauling out hay, with oxen he had himself sold to them, and when sold they were in prime condition, but now very poor and thin, had enquired whether the hay was going to be sold, and on being told yes, had said it was very evident they sold their hay, and fed the cattle upon straw, as the oxen plainly show. Young horses he thought wanted a good roomy shed, with plenty of fresh air, and water, and some oats also would be found to be of great service to them.

Mr. ROBINSON considered raising stock a very interesting question, especially with reference to the gold Mr. Cooke had mentioned. Farmers (he said) should learn the best and most profitable method of feeding stock, they being now of great value, though I remember the time when they were of no value at all. The time has now arrived when the knowledge of the art of feeding is of great value, for he who raises them best makes the most money. Since thrashing machines have been introduced into this country, all men thrash their grain out in the fall, and so sustain a great loss both in thrashing their grain and wasting their fodder, being obliged in consequence to purchase straw or other food in the spring. I myself, the day after threshing spend from half to a whole day in raking down and topping up my strawstack, so as to make it impervious to rain, and therefore it keeps dry and sound till the spring. When I first came on to my land, I built a stable about the first thing, and found the beasts in it lived upon two thirds of what those in the open air consumed. I availed myself also of a cheap way of building a stable, on which I put a small straw stack, our timid animals thus got their share of the food, and the rest they required. Men have many different ways of feeding, some prefer hay, others advocate other things, such as oat straw, pea straw, &c. When men raise a field of turnips, they generally estimate the crop by the market value or say 7½d a bushel, but the best way is to calculate the rent of the land, the value of manure and cost of hauling it out, the value of the rest of the labour bestowed on the crop, and the seed, &c., and then we arrive at a fair valuation. When I used to live at Peterborough, Mr. Walton, who raised crops of from 100 to 1000 bushels per acre, told me they cost him about 2½d a bushel, and he used them largely to feed his cattle; his thorough bred Durhams were fed on hay and turnips, his grade cattle on straw and turnips, and he considered these roots, viz: turnips, mangel-wurtzel, &c., together with a warm house, the cheapest and best method of feeding in this

country. How often do we see steers 4 or 6 years old no larger than a cow. I killed one of that sort myself a short time ago, which only went 500lbs of beef, they ought to weigh that at 2½; on new farms, turnips are easily raised on the new land, on old ones a piece of old grass broken up, and many other places present equal facilities for raising them, so as to force cattle on and turn the money for them twice in the five years, which would certainly tend towards the jingling of sovereigns spoken of. Has an estimate ever been taken of those cattle who live under straw stacks upon straw, as to how much butter they make in summer and of what quality, and how much they are worth themselves, as compared with those well fed; do they not bring inferior stock, defective in bone and muscle, and bad for work. Those who keep a dairy in this way lose both in butter and in their young stock, besides that he who can only bring them to market in 5 years, runs double risk to him who brings them to market in 2½. To improve stock it is necessary to import better animals than we have in general, and to keep them we must improve our system of feeding and housing; he who gives but straw can never improve his stock, and how painful it is to see cattle after a snow storm in the night, standing with their backs all humped up, and their feet close enough together to stand in a half bushel measure, and the loss must be immense to those who act in this manner. He who keeps his cattle well turns his money over in 2½ years, he who keeps them badly has to wait five; and both begin and end poor, because he follows a bad system. Where I used to live near Peterborough some men began poor, they had not even money to buy cows or oxen, so they bought two or three calves, these they took care of, and so from small beginning they ended by being wealthy men, and all from the care they took of their stock. Some men are thriftless and careless about animals, and such a man may buy a cow and a yoke of cattle, and go into the woods with them, when you next hear of him his cow perhaps is dead, and one of his oxen not expected to live, and so it goes on, and he ends poorer than he began, and while some begin poor, and gradually get wealthy, some keep always poor.

Mr. Fox would rather be excused, for he came to learn and not to speak, but he cordially agreed with the last speaker in the remarks he had made as to the necessity of taking care of animals.

Mr. DALE congratulated the meeting on being so numerous and respectably attended. His principle was to take notice of everything, and if as he passed along, he saw a good field of wheat he always asked how it was grown, and what manure was put upon it. The first thing he thought men should do was to buy good horses and get good ploughmen, then put up good buildings, and purchase the best stock possible. Strawcutters were very good things, and he liked them very much. Cattle ought to be fed upon hay and turnips, cows especially, and if a man could not do that, he must do the best he can. Good sheep seemed scarce, he thought some people did not try to get them somehow or other; he tries to plough as deep as he can, does his best



to raise good crops, and keeps the best stock he can procure. When he was fourteen years old his father set him to work, as he did the rest of his family, though there was no necessity for his doing so, and being set to the plough early, he was not afraid to compete in stock or in work with any one. He thought men ought to work their land regularly, keeping a regular proportion in fallow, so as to be able to manure it all in turn and not let their manure lie just on the road side. There was a great advantage in changing seed, in Yorkshire he had known men send their waggons 15 miles to get a good change of seed, and he believed they got one-third greater crop by so doing. He cautioned the meeting to attend to their seed peas when they purchased them, for there was a quailworm in peas now, which if not looked to would destroy the crop. He learnt to farm on a field left him by his father, out of the proceeds of which he had to pay something to a brother. The steward of the neighbouring estate persuaded him to sell, on the promise of the next farm there was to let, he did not get that one, nor the next, so he was disgusted and came out here.

Mr. GRIFFITHS has been a farmer for some time he had travelled through the country a good deal, and thought the sheep were worse than they need be, perhaps it arose from their having snow and ice frozen on to them. He had had cattle in open sheds, which were pretty tight, but still some of them had their heels frozen. Agreed with the Secretary on the necessity of feeding regularly. He once fed some cattle on a pint of ground peas and some pea straw, and they came out very well in the spring. Could not bear to see cattle laying out in the winter, and had often lain awake all night when his own were not well sheltered during a storm, thinking over it, and thought cattle had feelings as well as men though their necks were harder.

Mr. SWEART had not add to what he had heard. He had heard some very excellent remarks and had learnt much from the secretary's paper, the principles of which however, he had been following up as far as possible. Every place had a barn, and every man could put up a shed against it. Had winter began six weeks ago, he would have been without a place for calves, steers, mare and two colts, tried to get carpenters to put up sheds, but they asked too much, so he set to work with his man, did his best, and in one day will have built comfortable places for 8 calves, 6 steers, mare and two colts, besides which he had 18 animals stalled. He hoped it would be substantial, but he had built it against another shed, only at the cost of timber and nails, not counting his own work. Last winter he had a shed for 10 cattle, and a part of it divided off for sheep, with a loft overhead for hay, &c. Having begun farming here only a year or two ago, had purchased too much stock, and they came in poor in the fall, and the neighbours said he could not winter them; two of them being very poor got hay and turnips, the others only oat straw till near a month of their calving, when they had hay and turnips regularly, and they brought excellent calves. He brought one calf early in May with its mother, and two other cows which calved in

June; his neighbours advised him to kill the two last for he never could winter them, but he said he would try. One he sent off to be wintered elsewhere, for the other two he parted off a corner in his barn, with a little opening to the outside, and fed them on hay and turnips, and they came out in the spring worth each of them half as much again as the oldest, which was worth in the autumn two dollars more than them, and he had no doubt had sufficiency of hay both to eat and spoil, and they are now being brought up for the yoke. His sheep were put up very poor, but he fed them on pea straw cut green, and they gave him a nice flock of lambs in the spring. The straw came off 8 acres of peas, which brought 240 bushels of peas, and 6 acres of peas and oats, which brought 240 bushels of grain, all of which he cut early and got in well. He thought we ought to buy a small flock of good ewes at from nine to ten dollars a piece, instead of a large quantity of poor ones, and then breed to good stock. He was perfectly convinced of the wisdom of that course, for cattle bred from pure-bred bulls were heavier at one year old than common ones at two. We can all afford to buy a lamb, if we cannot get a full grown ram, and nurse him up to his full size. He himself had paid 2s. 6d. each for ten common ewes to the ram, so as to improve his stock and thinks cost no object in raising good stock.

Mr. KENNEDY feeds upon straw, and has but little accommodation for cattle, to show how he fed them, he has one cow six years old, that had never tasted either a turnip or a handful of meal, and though Mr. Cooke praised the appearance of his stock, he thought it rather unnecessary for him to speak. The plan he pursued was this: after mowing he kept one field from being pastured, till about this time, and finds 8 or 10 acres kept this way worth more than the hay taken off it. This year had a rough field by the road side kept this way, and a friend of his riding by remarked he had lost the grass of it, he supposed he had not, and events proved it, for he turned a broken down yoke of cattle, some twelve or fifteen years old into it, and they refused hay, and fattened in spite of the snow and cold, and he got \$92 for what cost him \$55. He never used turnips even in hard weather, and this very evening they had all ran off there. Had a pair of steers a year old in April and June, that girthed five and a half feet, one he had not fed having hurt his leg, but the other, with a heifer that ran with him, he kept in this way for very little. When indian grass grows long, the under part does not freeze and the cattle do better on that with a little straw, than when kept alone on hay. Sheep might do very well when kept up, for a man like him however, who is lonehanded a plan like his does very well, and animals thrive well on it.

The CHAIRMAN said all the different remarks had been very good ones, and he thought Mr. Dale was right about the advantage of changing the seed, from his own experience, and he agreed with Mr. Robinson as to his remarks on the difference between good and bad feeding, and the able remarks that had fallen from other gentlemen.



He expressed his great satisfaction at this club having been originated, and hoped the next meeting would prove as numerous attended as this one. Begged for the assistance of all who could come, as it needed support, and was attended with no expense to those who attended, all the trifling expenses connected with it being paid by the Agricultural Society.

The next meeting was then named for Thursday the 5th of January, at Donaldson's Hotel, at 6 o'clock, P.M. Subject for discussion—The cultivation of crops.

A vote of thanks was then passed to the Chairman, who returned thanks, and the meeting separated.

## Communications.

### A CHALLENGE.

WILMOT, Dec. 15, 1853.

To the Editor of the *Agriculturist*.

DEAR SIR,—I observe from the report of the Guelph Farmers' Club, that Durham cattle and Leicester sheep, are the most profitable stock for the Canadian farmer; and as I am one of the many who demur to this, I challenge any one of the Club, having the animals, to a trial, as under: Two acres of pasture to be fenced off for each party, half way between Wilmot and Guelph, and I will send two Devon cows and two Down ewes, with their lambs; against two Durham cows and two Leicester ewes, with their lambs; from the 15th of May, to the 15th of October.—The Devon cows to produce the most butter, and the Down sheep the greater increase of weight.—The sheep to be weighed at the commencement and termination of the trial. The produce of the cows to be given to the parties in charge of the stock.

An answer to me direct, or through the *Agriculturist*, shall have immediate attention.

Yours respectfully,  
DANIEL TYE.

### ON THE MANAGEMENT OF SHEEP.

To the Editor of the *Agriculturist*:

DEAR SIR,—Having read in the December number of the *Agriculturist*, the report of the discussion by the Guelph Farmers' Club, on "Sheep Husbandry," I observe that some remarks were made as to the best remedy for ticks on sheep.

Mr. Parkinson recommends immersion in a dilution of Arsenic, but thinks if sheep were bad with ticks in the beginning of winter, it would, perhaps, be better to let them alone. Mr. Harland mentions a strong decoction of tobacco, and also mercurial ointment, as having been used.

I beg to state that I have used the first remedy mentioned by Mr. Harland, viz.: a decoction of tobacco, frequently, and with complete success, and that I have found it could be used on any fine day in the beginning or early part of winter, without the slightest bad effect upon the sheep. I should prefer this remedy to the use of arsenic,

or any other strong poison, as being a much less dangerous application.

My mode of applying the remedy, is to take 1lb. of common coarse tobacco to—as near as I can recollect—about every 10 or 15 sheep in the flock; chop or break up the tobacco in small pieces, and then boil or simmer it well in about one pail of water for each pound of tobacco, till the latter has imparted all its poisonous, or narcotic qualities, to the liquid; then drain the whole through a sieve or cloth to separate the leaves.—When nearly cool apply it to the sheep in this way: Having secured them in a pen or shed, take any small vessel with a spout, about the size of an ordinary quill, and having an assistant to catch and hold the sheep, one at a time,—part the wool lengthways all along the back, and pour in the liquid, from one end to the other of the seam. Repeat the operation in two or three places along each side of the sheep or lamb—so that the whole skin may receive a slight moistening from the liquid. A small quantity of the liquid will be sufficient if properly applied, and as I said before, I have found the remedy completely successful, and not attended with any ill effects, even in winter, if the operation is performed on a bright fine day.

In reference to Mr. Card's remarks in recommending a cross between the Leicesters and Southdowns, as producing heavier lambs at an early age than pure Leicesters, and his statement that two lambs of the former sort, at four and a half months old, averaged 13 lbs. to the quarter; I beg to state that in the autumn of 1851, I killed several lambs about five months old, averaging 16lbs. to the quarter. I thought them exceedingly good lambs, but did not consider the weight anything very extraordinary. The lambs were not exactly pure bred Leicesters, but were bred by improving upon a good stock of common sheep for a good many years, by the use of good Leicester Rams.

Leaving the above remarks at your service,  
I am, Yours truly,

H. T.

Toronto, Dec. 20th, 1853.

### CHEESE, &c.

DEAR SIR,—I have pleasure in acknowledging your's of the 3rd inst. I will endeavor to comply with your request, although my experience has been but limited; still the results you are welcome to. In my communication, I desire to be brief, and you may make such remarks, strictures, &c., as you may see fit.

The process of cheese making, as practised by me, is this: The rennet is applied, it being brought to 90° Fahrenheit. As soon as coagulated, it is dipped into a linen strainer of rather a coarse texture, in a cheese basket, to drain during the night; in the morning the milk is strained into a dairy kettle upon an arched stove, and as soon as coagulated,—by the mixture of rennet as before,—the night's curd is added to it; a brisk fire is applied to the kettle, raising the mass to the temperature of 100° Fahrenheit, (being careful to stir it well to prevent burning).

The whey now will separate from the curd very freely, it is then dipped quickly into the strainer and basket,—as before,—to drain off the whey. As soon as may be, having a tub of water ready, place the curd in the strainer, *under* the water, crushing the curd to fineness *under* the water, which chills the curd and washes all whey from it; it is then drained or rather the water is wrung from it, when it is ready for salting, giving about one common teacup full to 20 lbs. of curd; it is then put into a hoop (after thorough mixture) in a fine strainer to prevent sticking, and weight is sufficiently applied to express all the water as soon as possible. You cannot hurt cheese by pressing made in this manner; it is then placed in the cheese room and good attention given to it. I always cover my cheese with cloth, pasting it first as you would a wall for paper; afterwards saturating the cloth thoroughly with flour mixed with colouring material.

With regard to my farm, stock, &c., I may say that, my advantage in respect to situation is favorable for grazing and dairying, as also equally for cropping. My farm is well watered, a living stream passing through it of easy access, land rolling, but also having rich flats which are under-drained, producing grain in rotation, with grass. I seed timothy mixed with red and white clover; the soil in these flats is mostly alluvial with a strong subsoil: otherwheres the soil is a rich, clayey loam, with the usual mould of new land. As some parts are but recently reclaimed from the wilderness, it puts forth its virgin strength under almost any sort of management, whether for grass or grain; nevertheless, my soil being good, I endeavor to keep it so by thorough manuring and cultivating: and my crops, at least, are not on the descending scale, and since I have stocked my farm for my dairy, I have found it ascending. I have been particularly favored this season in this respect, both with spring and fall crops. I have 28 cows, grades mostly, crossed with the Devons, (if any), as some are one-quarter, and two or three one-half. I have not consulted the Herd Books in stocking, but I have consulted economy and home-made breeding, by observing commendable qualities in cattle we have, and enhancing these by every means care and attention can give.

They are all stabled at nights from the time the pastures fail, which, here, is about the 15th Nov., until there is good feed in the spring, which is about 10th May, here. I have managed this year so as to have my cows come in from the 10th April to 1st May, which I believe to be the most profitable in cheese making, as I find the richest cheese from grass. I dry the most of the cows in January; I feed through the winter plenty of straw (brining it) at night, and hay in the morning. I generally raise the Swedish turnips to feed daily, in order to keep them in good heart; slop with bran from the calving till the wild plum trees are in full bloom. I have not had any sick cows as yet. The average produce per cow, from the middle of May, is 2 lbs. cheese per day, until the drought became extreme; about the 15th of July they began to fail. The average since has been nearly 1½ lbs. per day, exclusive of the

milk which was set to make butter for a family of twelve. I have now (Dec. 9th) made 8,500 lbs. cheese this year, averaging a little over 300 lbs. each cow, besides what milk was consumed for family purposes.

These directions may serve beginners, and may surprise old dairymen. This is but my fourth year at the business. I took only the second prize at our Township Show, as also at the County Show. I suppose by this our County excels in Cheese.

I would take the liberty of suggesting the propriety of the Provincial Association requiring of those that take any premiums in future in grain and dairy produce, to give a description of their management, as likewise other remarks suited to the case. This, at least, would be entertaining and instructive to many; much may also be learned by comparing modes, results, &c., especially as respects these articles of produce.

Your humble, ob't. servant,

S. T. CASEY.

Prof. GEO. BUCKLAND, Toronto.

Thurlow, Dec. 9, 1853.

#### POINTS IN BREEDING.

To the Editor of the *Agriculturist*.

DEAR SIR,—I perceive by your last number, that you have published Mr. Rotche's "*points of excellence*" adopted by our society. I refused taking any cattle to our State Fair at Saratoga for no other reason than the Society adopting so childish, and erroneous a production, and was surprised that any part of a breeder's herd should be disgraced so much, as to be shown under so low a standard; but, on arriving on the show ground, and conversing with some of the *best judges*, I found they did not intend to act under them. Some of them thought they were a decided *insult* to good judgment, and set them aside altogether. Others had not sufficiently considered the matter to act upon, or refuse them. In answer to a letter I wrote to John Johnstone, Esq., of Geneva, in whose judgment I have always placed the most implicit confidence, he says, "If I am to be a judge it must be what I consider good points; as soon as I read [or, at least, read a part of Mr. Rotche's, as I had not patience to read them all] I considered them too silly even to give them a thought." And such are the views of every "*practical breeder*" to whom I have advanced the subject. I will now show a few ridiculous ones. Mr. Rotche says "the shoulder of the Short Horn should be somewhat *upright*, and good width at points, with the blade bone just sufficiently curved to blend its upper portion smoothly with the crop." Did any one ever read such nonsense, and coming from a "*scientific breeder*." Are these "*bones*" to be "*curved*" with some *scientific instrument* at the time the animal is calved, or how is it to be effected. "*Upright shoulders*" are one of the first and greatest evils an animal can inherit, for they are sure to produce a *very lean crop, generally bare bones*, connected with "*projecting shoulder points*." These are never failing signs of low breeding. A large extended



paunch with coarse boned legs to support it, always accompanies these miserable points, destroys the whole of the animal's symmetry, and "flabby handling" is sure to be the consequence of such a shape; it very seldom varies, for where you see one of them most of the others follow, and I should despise a beast with so low a character. Mr. Rotche says, "the crops are one of the most difficult points to breed right in a Short Horn." How can it be otherwise, when *he who pretends to be at the head of breeders*, instructs them to breed upright shoulders; can anything be more absurd?

Quality.—Mr. R. describes this exactly to correspond with the above shapeless points. The idea of "raising the skin with the thumb and finger to show that it should have a soft, flexible, and substantial feel." If any of your readers can make sense of this, and have tried the experiment, I hope they did it with their white kid gloves on, and then report their experience for publication. Again. "When beneath the outspread hand it should move easily with it, and under it, as though resting on a soft, elastic, cellular substance which however, becomes firmer as the animal ripens." I should like to know whether Mr. Rotch studied this "*soft*" kind of quality in his "*soft*" snug arm chair, by a "nice warm fire" with his foot resting on a soft Brussels carpet; or, whether he had the animals under his own eye and hand, in his own yard, then fed them, and had them butchered to prove it all. If so, I consider them very "*soft*," flabby handlers, and that such meat, while hanging on the shambles, never sets except when frozen; it is always "*soft*" until dried up on the spit, or in the oven, and then is very "*hard feed*."

My idea of quality is very different. The hide should be moderately thick and mellow in the hand, and the flesh under it should be "elastic." This word sums up the whole of quality, it is so in store condition, and until nearly ripe, when it should handle as firm as a mackarel. The best butchers know all this, and invariably select such kind of cattle in Smithfield or large markets. In such the meat is always interlarded or marbled, the fat and lean are put on together, and they keep together until they come upon the table which the breeder should always be proud to see. Such meat appears larger when cooked than raw. The "handling" that Mr. Rotche describes as "*cellular substance*," can be nothing less than crevices in the flesh, which he says fills up as the animal ripens. Now it is plain to any man of common sense that if these crevices are filled up at all, it is with "*soft*" oily fat, which runs from the lean when warm; in summer weather always appears greasy, and when brought in contact with the fire is drained of nearly all its nutriment. I will leave it to any family man of intelligence, whether he has not experienced the evil of having to carve numerous pieces of beef similar to the above, and many a good cook has been blamed when the breeder is the only cause. I consider the beef of the one worth one third more to the consumer than that of the other. Once more. The "*Udder*."—Mr. Rotch says this should be pliable and "*thin in its texture*, reach-

ing well forward, roomy behind, and teats standing wide apart, and of convenient size." Breeders of Short Horns, look at this, and then tell me if a "*fleshy udder*" could be better described, such an one can never be *thin in its texture*, and is a strong indication of a miserable milker. All the above points of Mr. R. accord with each other, but in my opinion constitute a *worthless specimen of breeding*, and if Agricultural Societies elect such men that can countenance such stuff and adopt it as a standard, the best breeders will cease to exhibit.

I am, dear Sir,

Yours sincerely,

WM. HENRY SOTHAM.

Piffard, Livingston Co.,

Dec. 6, 1853.

#### COAL, GYPSUM, &c. IN UPPER CANADA.

To the Editor of the Canadian Agriculturist:

Sheepwalk, Brantford, Dec. 10, 1853.

SIR,—In fulfilling a promise on returning from an examination of the Ohio Coalfields, I have to communicate some further remarks on the probability of finding bituminous coal in Western Canada. It will be unnecessary to say anything on the importance of the subject, as large sections in Western Canada are now entirely destitute of wood for domestic use. I have prepared a paper intended to be read at the Canadian Institute, but a poor state of health had prevented a personal examination of some of the localities desired, and on my arrival in Toronto last summer the session had terminated.

Before stating certain corresponding geological facts to be found in the European and American Coal fields, I am desirous of showing the fallacy of the theory so confidently advanced by some, "that Canada is geologically too low, by many hundred feet, to warrant the expectation of finding coal bearing strata." Now it happens that there is not much difference in the elevation of the Coal fields of Ohio and Michigan, and the section indicated in Western Canada is about the same altitude; but there exists another geological fact which seems to be forgotten or not practically understood. I allude to the prevailing feature, in most of the great mineral masses, of the recurrence of strata in the same or similar strike and dip. This fact is exemplified in the South Wales Coal field, which is again found twice recurring, in many of its chief features, in the Forest of Dean and other parts of Gloucestershire, the strike and dip here are generally about S.E., with some variations as found from my own inspection and recollection in 1837. I cannot now find my notes. The Coal Works near Boulogne, in France, are about S.E. from the preceeding, and have many similar associate features, and here again the workings dip and extend under the overlaying new formations of Chalk and Oolite: again in the south-east will be found the great coal region near Valenciennes; a further illustration may be stated in the Bituminous Shales accompanying the Mendip, Somersetshire, Coal field, which again recur—and have produced spontaneous combustion—in the south-east on the coast of

Dorsetshire, this was inspected by myself and a large party in 1829 or '30. Ignition appears to originate in the decomposition of Iron Pyrites.\* In bringing under notice corresponding illustrations in the great North American Coal fields, spread before you the map of North America, and draw a line from the great Coal field near Richmond, in Virginia, to the Coal field in Michigan; this line will be about N. E. and S. W., and may be supposed to be some miles wide; in tracing its course from Virginia it will be found that it passes through, or near, the great Coal regions of Pennsylvania and Ohio, and also passes through, or near, the Townships of Adelaide and Enniskillen, in Western Canada. From both these Townships invitations have been sent to me to examine various Bitumenous indications, and in all the developments examined, the strike and dip are generally about S. E., at different angles, but with some variations. The invitations alluded to were chiefly communicated by a Mr. Robert Johnstone, as exhibited on estates belonging to himself and Mr. Whitley in the said Townships; gentlemen who are entire strangers, but I take this opportunity of thanking Mr. Johnstone for his communication, which shall receive the earliest attention my health will admit. I have indeed no doubt of the existence of seams of Bitumenous Coal, but the quality and extent can only be ascertained by boring or sinking, or probably both.†

On a question of so much public interest I had expected some co-operation from the Government and had written to the Hon. F. Hincks respectfully to ask if, under the circumstances, assistance may be expected, to aid in the intended examination, but I regret to say that my letter was not honored even with a notice.

As the object of this communication is intended to refer to matters of general interest, I have to offer a few remarks on our Agricultural organization, &c., the theory indeed appears to be very well chalked out, and by way of encouragement I remind our friends that they have an excellent precedent in the records of the late Board in Sackville Street, although we can scarcely expect, until after a few years experience, that we shall approximate to the attainments of Arthur Young and Sir John Sinclair. The farmers anticipate an intellectual treat from the high attainments of the gentleman now at the head of the Department; but for practical purposes an agriculturist would be desirable: it must indeed be kept in mind that if practical efforts are not judiciously made, irrespective of sectional or party feeling, the people will soon become tired of the thing, and desire its abolition.

\* Facts in further illustration may be seen by referring to Dr. Buckland on the London and Dorsetshire Basins, the numerous recurrences in the great Chalk and Oolite formation have been traced from its N. W. commencement in England, through Europe, and forming large tracts in Ancient Palestine; and again extensively found in the distant S. E. forming the fine sheep walks in Australia, as described by Sir George Arthur.

† The Geological Report of Mr. David D. Owen on the mineralogy of Iowa, Wisconsin, &c., recently published, describes the recurrence of large Bitumenous Coal fields in the north-west and west, as far as explored to the lands of the Hudson Bay Company.

In connection with the results of railway communication, and the pressing demands now made on our flock masters, not only for our own domestic use, but also for our superior stock to ornament the farms of our neighbors in the United States; every assistance should be given to facilitate the important branch of sheep farming. It is indeed quite a new and delightful feature in Canada, in which an old farmer from Salisbury Plain may be supposed to participate and know something. Our gypsum, especially the cretaceous variety, will in many cases supply the more expensive agency of guano, particularly in acquiring early green food, such as rye, *the very best thing that can be had for ewes*, to raise a flow of milk for lambs in April and May; these facts suggest the desirableness of an increased supply of this valuable mineral.

Apologising for this intrusion on your valuable time and labors, which are duly appreciated,

I remain with great respect

Your obedient humble servant,

HENRY MOYLE.

## Editorial, &c.

G. BUCKLAND, ESQ., EDITOR.

H. THOMSON, ESQ., ASSISTANT EDITOR.

### HINTS FOR THE MONTH.

As but few field operations can now be attended to, a few practical suggestions, in regard to the winter economy of the farm, will not be out of place. During several months, the scene of a great portion, and a most important portion, of the farmer's labor will be in the barn, and in the stock yards. We cannot too often, or too strongly, urge the necessity of proper attention to the comfort and feeding of live stock during the winter months. Although we trust that most readers of the *Agriculturist* bestow some thought on this branch of farm business, yet we are well aware that through the country at large it is much neglected.

Care in the selection of good animals to breed from, although most important to the production of good stock, will be fruitless without a due supply of the proper quantity and quality of food, and due protection from the weather. The construction of the farm buildings, is a primary consideration, but if the farm is not already provided with a good establishment in this respect, it will, we fear, be too late to remedy the deficiency for this season. All that we can reasonably look for, will be the repairing of minor dilapid-



tions, or supplying requisites which have as yet been neglected. Under this class of work will come the putting in good order of the fences, gates, &c., of the yard, nailing up loose boards about the sheds, providing good straw and hay racks, troughs to feed roots, chaff, or meal from, salt trough, &c., if these matters have not already been attended to. Be regular in the hours of feeding stock, and of supplying them with water. Irregularity in this respect, although its ill consequences may not be immediately perceptible, exercises a very injurious influence upon the health of the animals. In feeding cattle kept in the straw yard, take care and distribute the fodder well, so that the weaker animals can get their share without being driven about or oppressed by the strong. A few Swedish turnips, carrots, or mangel wurzel to cattle kept on straw, will assist them greatly in getting through the winter in good condition. A supply of salt should also be afforded, either in a trough under cover, where they can have access to it at all times, and then they will never take too much, or they should have a small portion given them at least once a week. Take care that cattle kept in stables, or houses, be kept sufficiently warm, but at the same time pay due regard to ventilation. Pay particular attention to keeping the stables thoroughly cleaned, and give a good supply of litter, as on this much of the comfort, and consequently condition, of the animal depends. Young calves require particular care, and should be kept in warm quarters, at all hours, except in the mildest weather, and should have plenty of dry litter. Feed them good sweet hay, with fresh oat or pea straw, and once a day, a little meal, or occasionally an allowance of roots. Sheep require good shelter from inclement weather,—but not to be kept too warm,—and a dry situation. Feed with the best hay, and fresh pea straw, cut before ripened too much. They are very fond of the latter article. Give also a few roots occasionally in the early part of winter, and let them have salt regularly. This is quite necessary to their health. Rock salt is preferable, in a trough where they can have access to it at all times.

Providing a stock of firewood for future

consumption, is a necessary portion of the farmer's work in winter. In the olden times, when the object was to strip the native forest off the face of the country, as rapidly as possible, this was a matter not requiring much consideration. Now, however, when we look at the rapidly advancing prices of fuel, it becomes a very different matter, and farmers, who, by timely care, might derive a supply of fuel from a comparatively small area of land, in perpetuity, may find themselves reduced to purchasing that indispensable article, much sooner than should be the case. Instead of cutting an acre or two off of the corner or side of the wood, every winter, as many still do, who ought to know better, and thus gradually exterminating our native forests *in toto*, let the farmer who has made a sufficient clearing, go through his remaining timber land, and cut up all the fallen timber, sufficiently sound for use, first; and after it, all the dead standing trees, before broaching upon those that are still growing. The present season, before we have too great a depth of snow, is the best to attend to this operation. By adopting this plan, ten or twenty acres of land will be sufficient to supply an ordinary farm establishment with fuel for many years. When the situation in regard to market, and the facilities in regard to obtaining coal, are such that the rent of the land may be worth more than the cost of buying fuel, then of course it is a different matter. But the farmer should recollect one thing, that it is much easier to cut a tree down than to replace it, and use his judgment accordingly. And for our part, we would much rather, from old associations, see a handsome wood on a small portion of the farm, even if as an arithmetical question, the balance were slightly against it, than to see the country entirely deprived of the ornament and shelter, afforded by an occasional piece of wood. Another point we would recommend in regard to fuel is that of keeping it under cover and dry. Well seasoned wood contains ordinarily at least eight or ten per cent. of water; and green wood or that which is permitted to absorb water from exposure, a quantity varying from twenty to fifty per cent. Consequently when such wood is used, a great part of the heat which is ex-

pended in expelling this water in the shape of steam, is lost for the purpose for which it is immediately intended.

We will conclude these few remarks by reminding our readers, especially our young friends, that this is the season, the precious season, in which farm life affords the most time for improving the mind, and which, according as it is taken advantage of, or otherwise, will be followed by good or bad results hereafter. We would advise our young friends therefore, in addition to improving upon such lessons as they may have derived or be deriving from attendance at school, to read during the winter evenings, such useful books as they can obtain, of a sound and instructive class, and especially such as treat of the calling for which they are hereafter designed.—It is unnecessary to repeat that a competent knowledge of every branch of his business, is as necessary to the success in life of the farmer, as to the pursuit of any other profession. While on this topic we may take the liberty of recommending an excellent list of works upon Agricultural and Horticultural subjects, offered by Mr. J. Fleming, of this city. We would remind our friends, the farmers themselves, also, that this is the season to review their past operations, and lay their plans for the next season of active work. And with these remarks we wish all our readers “A Happy New Year.”

#### PREMIUMS FOR COUNTY REPORTS.

The Board of Agriculture will award a premium of the value of £15, for the best report on the agriculture of each of the following Counties, viz: *Carleton, Welland, and Prince Edward*. If such report be written by the Secretary of the County Society, the premium will be increased to £20, with a view to call out and encourage that important and laborious class of officers.

The Reports must be sent in to the Secretary of the Board of Agriculture, Toronto, accompanied by a sealed note containing the name and address of the writer, on or before 1st June, 1854.

No premium will be awarded to a report although it may be the best sent in, unless it possess sufficient merit.

#### TO THE OFFICERS OF AGRICULTURAL SOCIETIES.

We again beg to remind the office-bearers and members of Agricultural Societies generally of some of the more important requirements of the Statute under which they are organized. By 16 Vic. Cap. 11, all *Township Societies* are required to hold their annual meetings during the month of *January*, to submit at such meetings a full report of their proceedings and to elect officers, &c., for the ensuing year. Township reports are to be sent in to the Secretary of the *County Society*, previous to the annual meeting thereof, which according to the Statute should take place some time in *February*.—County reports should be full and explicit, both as regards income and expenditure, and the present state of agriculture, with suggestions for further improvement. The Secretary of each County Society is required to send his own report and those of the Townships entrusted to his care to the Board of Agriculture in Toronto, *on or before the 1st day of April, 1854*.

Those whose duty it is to prepare Reports, are particularly requested to write them out in a plain hand, especially the names of persons, places, figures, &c., and to append to each report a clearly drawn out Balance sheet, comprising on one side the principal items of income, and on the other those of expenditure, signed by the auditors and principal officers. All societies are requested to insert in their reports a complete list of the names and residences of their respective officers for the ensuing year, 1854.

Each *County Society* will have to nominate at its annual meeting in February, four fit and proper persons as members of the Board of Agriculture, to supply the places of those who vacate their seats, according to the terms of the Statute, 16 Vic., Cap. 11, Sec. 12. The following gentlemen will retire, unless they are re-elected: E. W. Thomson, Esq., President, York; R. L. Denison, Esq., Treasurer, Toronto; Sheriff Ruttan, Cobourg; and John Harland, Esq., Guelph. A certified copy of the names and address of the persons nominated, must be sent to the *Bureau of Agriculture, Quebec*, immediately after the annual meeting.



and the four persons nominated by the greatest number of Societies will be thereby constituted members of the Board.

It may be convenient to some to append to this notice a list of the members constituting the present Board; and we would strongly recommend the careful perusal of the Agricultural Statute, to all officers of Societies, and indeed to all such as feel an interest in aiding the great work of agricultural improvement and national prosperity:—

#### BOARD OF AGRICULTURE,

JANUARY, 1854.

E. W. Thomson, Esq., *President*, York.  
R. L. Denison, Esq., *Treasurer*, Toronto.  
Professor Buckland, *Secretary*, Toronto.  
Hon. John Rolph, *Minister of Agriculture*, Quebec.  
C. P. Treadwell, Esq., *President of Provincial Agricultural Association*, L'Orignal.  
Hon. Adam Fergusson, Woodhill.  
David Christie, Esq., M.P.P., Brantford.  
Sheriff Ruttan, Cobourg.  
J. B. Marks, Esq., Kingston.  
John Harland, Esq., Guelph.

#### SHORT HORNS.

##### ARE SHORT HORNS CONSTITUTIONALLY DELICATE?

The Hon. A. Fergusson has sent us a notice of his cow *Victoria*, (see Am. herd book) who, it seems, has gone the way of all flesh. From this statement we feel confirmed in our opinion that under merely ordinary care, short horns will thrive, in Canada West, quite as well as natives, or any other breed. *Victoria* was sixteen years old, and in prime health and vigor.—For two years past, Mr. F. has indulged a hope of obtaining at least one other calf, from this valued cow. This hope, however, was not to be realized, and she was ordered to be slaughtered. Taken directly, on the 7th of December from a rough indifferent pasture, and killed within twenty-four hours thereafter, she proved as under:—

The four quarters.....	994 lbs.
Tallow.....	62 "
Hide.....	83 "

The beef was *marbled* and of excellent quality.

*Victoria* has had nine calves, viz., six bulls and three heifers.

Her last calf (*Kossuth*) carried the 1st prize, of his class, at the late Provincial Show, in Hamilton.

We have reason to know that Mr. F. is in correspondence with certain breeders in the United States, regarding the sale of this fine animal; but indulge a hope that his services may yet be retained within our own Province.

#### CHEESE MAKING.

We insert with much pleasure a communication from Mr. Casey, of Thurlow, describing his mode of manufacturing the cheese for which he obtained the first prize from the Provincial Agricultural Association, and also the prize offered by the President, for cheese (not stilton cheese) not less than 30 lbs. weight, at the late Exhibition at Hamilton.

Mr. Casey's description would be a little more complete, if he had given his mode of preparing the rennet, and the quantity used. His statement of the quantity of salt used,—a teacup full to 20 lbs. curd,—is a little indefinite. The *taste* is probably the general guide to the experienced dairy-woman in this particular, but a statement of the precise *weight*, and quality, used by successful cheese makers, would no doubt be valuable to many farmers. Mr. Casey's plan of covering each cheese with cloth as soon as out of the press is no doubt an excellent one.—The trifling expense incurred would be more than counterbalanced by the protection thus afforded from flies, by the prevention of loss from that source, and by the saving of labor. The covering might also assist in the proper ripening and mellowing of the cheese. Mr. Casey's remarks as to his management of his stock and farm, are interesting, and his concluding hints as to persons receiving premiums for grain or dairy products, giving a description for publication of their cultivation, or management, are deserving of being generally acted upon.

#### PUBLIC COMPETITION OF REAPING MACHINES IN SCOTLAND.

We condense from a Scotch paper, (for which we are indebted to Mr. Brown of Cobourg) the following account of the trial of Reapers which took place near Stirling, in September last. An immense concourse of spectators attended, including a number of persons of rank,

and deputies from each of the three National Agricultural Societies of the United Kingdom, and several distinguished agriculturists from the Continent of Europe. The Rev. Patrick Bell, the original inventor of the Reaping Machine was present, as was also Mr. Charles M'Cormick, the American patentee. Our readers will perceive that the result of this trial, as well as some others that were made both previously and subsequently in land and Ireland, places the improved Scottish Reaper in the first rank, M'Cormick's stood number two. Forty-one machines were entered for competition, but from some unexplained cause, only seven appeared for trial.

Lots being drawn, the machines were numbered as follows:

No. 1. Mr. Cochrane's Bell's improved.

No. 2. Mr. Hope's (Stirlingshire) Bell's improved.

No. 3. Mr. M'Cormick's, managed by Mr. M'Kenzie.

No. 4. Mr. M'Laren's Dray's Hussey.

No. 5. Mr. Robertson's (Bowhouse) Bell's Crosskill.

No. 6. Mr. Hussey's own; one horse.

No. 7. Mr. Bell's own Crosskill, managed by Mr. Love.

The first trial came off on a field of oats—the ground a deep alluvial carse soil, and quite level, the crop rather light—slightly laid to the southwest, but otherwise well adapted for machine reaping.

Owing to a defect in the revolving web of No. 1, Mr. Cochrane's Bell's, the machine would not deliver the grain, and, after some ineffectual attempts at cutting, the machine was withdrawn.

No. 2, Mr. Hope's Bell's, made fair work, but appeared to distress the horses, which required to go at a quicker pace than their natural speed. It appeared, however, to please many of the onlookers.

No. 3, M'Cormick's machine, cut the crop in the most perfect manner, the stubble even and regular. Owing to the restiveness of the horses starting, the pole was broken the first round, and required to be replaced. After the changing horses, the machine went on, cutting to the entire satisfaction of those present, the only objection being to the unthrifty way in which the corn was sheaved from the machine.

No. 4, Mr. M'Laren's Dray Hussey, made very indifferent work. To improve the appearance, the stubble in one or two instances was passed twice over.

No. 5, Mr. Robertson's Bell's Crosskill, appeared to advantage, making excellent work, but did not finish so soon as Mr. Hope's.

No. 6, Mr. Hussey's one-horse machine, for a time appeared to astonish many onlookers, but the horse, though a very powerful one, speedily became distressed, stopping frequently. This

machine did fair work when cutting to the lie of the corn, but rough work when cutting *with* the lie of the corn. It requires two horses to work it with anything like ease to the animals.

No. 7, Mr. Bell's Crosskill, only entered the field two minutes before the time of starting, greatly to the annoyance of the public. At the first public favor was divided betwixt M'Cormick's and this machine. The latter cut and laid in swathe the oats in the most perfect manner and otherwise made excellent work.

The next trial took place on the same field, each machine making one cut down and up the side of one of the proportions previously prepared. Bell's and M'Cormick's did the work to the satisfaction of most practical men—Hussey's less so.

The third trial took place on a field of wheat, crop mostly standing—apparently after plain fallow winter sown. The work here was with the same results as in the oats, Bell's and M'Cormick's being the decided favourites.

The fourth trial took place in a field of barley, smooth bottom—the crop much laid, but otherwise well adapted for the machines. The work here was more perfect with all the implements on Bell's principle than could have been looked for, and appeared to excite more surprise than the performances in the oats and wheat. M'Cormick's, however, performed indifferently, causing considerable loss by shedding. Hussey's also did indifferently.

The fifth trial was a field of beans and peas, very strong and green, and consequently a very severe test for the machines. Here No. 7, Mr. Bell's Crosskill, made a cut up the field with only one stop, a quantity of pease having retarded the delivery. In coming down, no stoppage took place. No. 5 followed, but made several stops in going up, and did not return. No. 2 next followed, but from being too low set, stopped; and after being readjusted, went up once, not returning. With No. 2 the horses were pushed beyond their proper pace, and soon overtook M'Cormick's. No. 6 followed, cutting a narrow space indifferently. The machines were again ordered back to the barley field, partly to show their working to the public, and also partly to show their cutting powers across the ridges; after which two of the machines were again ordered to be in the field, these being Robertson's and Hope's, the Judges not having made up their minds as to one point.

The arrangements were upon the whole satisfactory, although several complaints were made as to unnecessary delays. The secretary, Mr. Hutton, was assisted in his duties by Mr. Hall Maxwell, the secretary of the Highland Society. The public conducted themselves with the greatest possible propriety, and little or no damage was done to the crops. Of the many practical men present, and the number was very great, one opinion alone appeared to exist—that the machines cut the crops in a style equal, if not superior, to ordinary hand shearing.

The Judges were Mr. John Wilson, Edington Mains; Mr. George Hope, Fenton Barns; Mr. James Stirling, C.E., Edinburgh; Mr. Young jun., Burntisland; Mr. John Lockhart, factor, Dun-



more; Mr. Peter McEwen, Blackdub; Mr. William Henderson, farmer, Craigarnhill; and Mr. Alexander Young, factor, Keir. After full consideration, they made the following award:—"The subscribers having dispassionately examined the several reaping machines this day exhibited, are of opinion that the first prize should be awarded to Bell's No. 7, and the second prize to Mr. McCormick's." The first prize is fifty sovereigns, and the second fifteen sovereigns.

#### TURNIP SEED.

*To the Editor of the Canadian Agriculturist:*

DEAR SIR,—I have taken the liberty of forwarding some plants of the spurious turnip, which I mentioned to you last week. I should like to see your remarks thereon, in some early number of the Journal. I obtained the seed from a most intelligent and honorable seedsman in Scotland, whom I entirely acquit of wilful intention to deceive. It has, however, occasioned a serious disappointment to me, and is a matter well deserving a full investigation. When I returned from Toronto, I found my men engaged in taking up some mangel wurtzel, which grew adjoining to the turnips, and the seed of which I also obtained from the seedsman above mentioned. The soil was of like quality, and the manure applied was equal in quantity and quality. The soil was a black peaty loam, the manure, rich, well-rotted stable dung, chiefly horse dung. The mangel wurtzel was a very fair crop, considering the season, and consisted of three varieties, common red, yellow globe, and white. I recollect you hazarded a conjecture, that the climate, manure, or management, might have caused the failure, but you will see from a few Swedish turnip bulbs, which I have likewise sent, that such a theory fails, as these bulbs were found growing among the mangel wurtzel (about half a dozen or so in the field), and must have sprung from a few seeds, accidentally mixed with the seed of the mangel wurtzel. If my turnip crop had proved at all equal to the few turnips sent, it would have been indeed a blessing to my young stock.

Ever yours truly,

ADAM FERGUSON.

Woodhill, Nov., 1853.

#### REMARKS.

The specimens sent us are a sorry apology indeed for a crop of turnips! The failure is a total one, and is not occasioned by disease, such as the "Ambury," or what is in some parts of England denominated "fingers and toes," but is evidently caused by impure seed. The roots and stem much resemble the same parts in the ordinary cabbage, and show no trace of bulb whatever, although the leaves appeared genuine and luxuriant. Seedsman who are generally accustomed to exercise much discrimination and

caution in the conducting of their business, will be sometimes deceived themselves, which we have no doubt whatever was the case in the present instance. We fear, however, that among not a few dealers in seeds, a very culpable negligence and low moral principle prevails; and in all practicable cases no seeds should be sold, particularly when they have to be sent thousands of miles, without subjecting their vitality and purity to a satisfactory test. Knowing as we do the laudable desire which Mr. Fergusson feels to promote the improvement of stock in this Province, and the great pains and expense he has incurred for several years past in procuring first-rate animals, we can understand the annoyance and loss which he must experience by the total failure of his turnip crop.

We may appropriately observe here, that we sowed last fall some half dozen varieties of wheat, imported from a respectable Seedsman in London, one of them vegetated but indifferently, while another (Golden Drop) scarcely came up at all, and we have good reason for believing, that much of the seed had sprouted in harvesting (the harvest in England of 1852 suffered much from wet) and had been subjected to the fatal process (so far as the power of germination is concerned) of kiln drying. Occurrences of this kind, which unfortunately belong to a somewhat numerous class, variously modified, should certainly lead dealers to exercise greater diligence and caution in selecting their stocks, than, we fear, many of them are in the habit of doing.—[EDITOR.]

#### COCKSCOMBS.

*To the Editor of the Canadian Agriculturist.*

SIR,—Upon reading your remarks on the Horticultural Department of the late Provincial Exhibition at Hamilton, in the October number, I observed an error as to some plants exhibited by me, but did not consider the matter of sufficient importance to your readers to warrant correction. *The Horticulturist* of Rochester has recently copied your remarks, and inasmuch as something more is conveyed to the minds of exhibiting Horticulturists than meets the eye of general readers, and as the latter publication has a high character and wide circulation I desire now to put you right.

You stated—"Judge Campbell of Niagara, had some very good Cockscombs, seemingly the

same that figured at the Horticultural Show in Toronto, and received so much merited praise."

Not one Cockscomb plant of those exhibited at Toronto was taken to Hamilton, but every one of the fifteen taken to the latter city and exhibited at the Provincial Show were distinct and had not before been exhibited anywhere.

While upon this subject I may notice that your Horticultural critic omitted to allude to, and perhaps did not notice in my collection of Annuals a fairly grown plant of *Gomphrena Aurea*. It had not a very extensive display of bloom, but sufficient to shew a novelty and acquisition, and probably it is the only plant of the variety in bloom that has been exhibited in Canada West, (or with one exception) that has been raised in this Province.

I am Sir,  
Your obedient Servant,  
E. C. CAMPBELL.

Niagara, Dec. 9th, 1853.

We regret that any erroneous impression has been formed in consequence of our report. The error was simply this. The Cockscombs shown at Toronto were considered magnificent, and as such drew forth the highest praise. Those at Hamilton, from the same garden and put in by the same gentleman, were so superior to anything of the kind exhibited, that it was no wonder the remark was made,—they are seemingly the ones shown at Toronto, they are so very handsome. In reply to the other point we may state that as in all such cases reports are written out in a hurry, many interesting points which might be noticed are passed over either in obedience to the demands of time or space.

#### THE OX—HISTORY, MANAGEMENT, DISEASES, &c.

We propose to lay before our readers in the volume of the present year, the most interesting and useful chapters of Youatt and Martin's treatises on cattle. We have lately had frequent enquiries in regard to the best breeds, the mode of treating particular diseases, &c., and we do not believe we can render a more acceptable service to our readers generally, than to present them with the best information on these and similar points, selected from standard authors, such as those we have named. It would be an easy matter to copy from the Agricultural journals of the day articles on the history, management, and diseases of cattle, but these articles are often very hastily prepared and not to be relied on. The works of Youatt and Martin,

both eminent English authors, have been incorporated and reprinted in the United States in a convenient form, but still we may safely conclude that not one in ten of our subscribers, is in possession of this valuable work. Now, as we print the *Agriculturist* in a shape for binding, with Index, &c., if the reader will take the trouble to preserve the numbers, and stitch, or bind them at the end of the year, he will have the substance of one of the most valuable books on the subject of cattle now before the public, and costing for the American edition 6s. 3d.,—more than twice the cost of this journal to club subscribers.

We shall not allow this subject to engross more space than its importance demands, but will endeavor by judicious condensation and selection, to present all that is really essential for the Canadian breeder, in the course of the volume, without destroying the other features of the *Agriculturist*. We may observe further, that all the really useful illustrations in the original work will be copied. This will involve a considerable outlay, but we feel warranted in undertaking it in view of the increasing interest manifested by our farmers in the science and literature of their profession, and the consequent addition that we reasonably expect to our circulation.

In this number we give the principal portion of the introductory chapters. They are historical, but too important to be omitted.

#### HISTORY OF THE OX.

The Ox belongs to the Class *Mammalia*, animals having mammae, or teats; the Order *Ruminantia*, ruminating, or chewing their food a second time; the Tribe *Bovidae*, the ox kind; the Genus *Bos*, the ox, the horns occupying the crest, projecting at first sideways, and being porous or cellular within; and the Sub-genus *Bos Taurus*, or the domestic ox.

Distinguished according to their teeth, they have eight *incisors*, or cutting teeth, in the lower jaw, and none in the upper. They have no tusks but they have six *molars*, or grinding teeth, in each jaw, and on each side. Total number of teeth, 32.

The native country of the ox, reckoning from the time of the flood, was the plains of Ararat, and he was a domesticated animal when he issued from the ark. He was found wherever the sons of Noah migrated, for he was necessary to the existence of man; and even to the present day, wherever man has trodden, he is found in a domesticated or wild state. The earliest record



we have of the ox is in the sacred volume. Even in the antediluvian age, soon after the expulsion from Eden, the sheep had become the servant of man; and it is not improbable that the ox was subjugated at the same time. It is recorded that Jubal, the son of Lamech, who was probably born during the life-time of Adam, was the father of such as have cattle.

The records of profane history confirm this account of the early domestication and acknowledged value of this animal, for it was worshipped by the Egyptians, and venerated among the Indians. The traditions of every Celtic nation enroll the cow among the earliest productions, and represent it as a kind of divinity.

The parent race of the ox is said to have been much larger than any of the present varieties. The Urus, in his wild state at least, was an enormous and fierce animal, and ancient legends have thrown around him an air of mystery. In almost every part of the Continent, and in every district of England, skulls, evidently belonging to cattle, have been found, far exceeding in bulk any now known. There is a fine specimen in the British Museum: the peculiarity of the horns will be observed, resembling smaller ones dug up in the mines of Cornwall, preserved, in some degree, in the wild cattle of Chillingham Park, and not quite lost in our native breeds of Devon and East Sussex, and those of the Welsh mountains and the Highlands. We believe that this referred more to individuals than to the breed generally, for there is no doubt that, within the last century, the size of the cattle has progressively increased in England, and kept pace with the improvement of agriculture.

We will not endeavor to follow the migrations of the ox from Western Asia, nor the change in size, and form, and value, which it underwent, according to the difference of climate and of pasture, as it journeyed on towards the west, for there are no records of this on which dependence can be placed; but we will proceed to the subject of the present work, the British Ox.

### THE BRITISH OX.

In the earliest and most authentic account that we possess of the British Isles, the Commentaries of Cæsar, we learn that the Britons possessed great numbers of cattle. No satisfactory description of these cattle occurs in any ancient author; but they, with occasional exceptions, possessed no great bulk or beauty.

Cæsar tells us that the Britons neglected tillage and lived on milk and flesh; and other authors corroborate this account of the early inhabitants of the British Islands. It was that occupation and mode of life which suited their state of society. The island was divided into many petty sovereignties; no fixed property was secure; and that alone was valuable which might be hurried away at the threatened approach of an invader. Many centuries after this, when, although one sovereign reigned paramount over the whole of the kingdom, there continued to be endless contests among the feudal barons, and still that property alone was valuable which could be secured within the walls of the castle, or driven beyond

the invader's reach; an immense stock of provisions was always stored up in the various fortresses, both for the vassals and the cattle; or it was contrived that the latter should be driven to the demesnes of some friendly baron, or concealed in some inland recess.

When the government became more powerful and settled, and property of every kind was proportionably secured, as well as more equally divided, the plough came into use; and agricultural productions were oftener cultivated, the reaping of which was sure after the labor of sowing. Cattle were now comparatively neglected, and, for some centuries, injuriously so. Their numbers diminished, and their size appears to have diminished, too; and it is only within the last 150 years that any serious and successful efforts have been made materially to improve them.

In the comparatively roving and uncertain life which our earlier and later ancestors led, their cattle would sometimes stray and be lost. The country was then overgrown with forests, and the beasts betook themselves to the recesses of these woods, and became wild, and sometimes ferocious. They, by degrees, grew so numerous as to be dangerous to the inhabitants of the neighboring districts. One of the chronicles informs us, that many of them harbored in the forests in the neighborhood of the metropolis. Strange stories are told of some of them, and doubtless, when irritated they were fierce and dangerous enough. As, however, civilization advanced, and the forests became thin and contracted, these animals were seldomer seen, and at length almost disappeared. A few of them yet remain in Chatelherault Park, belonging to the Duke of Hamilton, in Lancashire; and in the park of Chillingham Castle, in Northumberland, the seat of the Earl of Tankerville.

The wild breed, from being untameable, can only be kept within walls or good fences; consequently, very few of them are now to be met with, except in the parks of some gentlemen, who keep them for ornament, and as a curiosity. Their color is invariably white, muzzle black; the whole of the inside of the ear, and about one-third of the outside, from the tips downward, red; horns, white, with black tips, very fine, and bent upwards; some of the bulls have a thin, upright mane, about an inch and a half or two inches long. The weight of the oxen is from thirty-five to forty-five stone, and the cows from twenty-five to thirty-five stone the four quarters (fourteen pounds to the stone). The beef is finely marbled, and of excellent flavor. The six year old oxen are generally very good beef; whence it may be fairly supposed that in proper situations, they would feed well.

At the first appearance of any person, they set off in full gallop, and, at the distance of about two hundred yards, make a wheel round, and come boldly up again in a menacing manner; on a sudden they make a full stop at the distance of forty or fifty yards, looking wildly at the object of their surprise; but upon the least motion they all again turn round, and fly off with equal speed, but not to the same distance, forming a shorter circle,

and again returning with a more threatening aspect than before; they approach probably within thirty yards, when they again make another stand, and then fly off; this they do several times, shortening their distance and advancing nearer and nearer, till they come within such a short distance that most people think it prudent to leave them.

When the cows calve, they hide their calves for a week or ten days in some sequestered situation, and go and suckle them two or three times a day. If any person come near the calves, they clap their heads close to the ground, to hide themselves: this is a proof of their native wildness.

The dams allow no person to touch their calves, without attacking them with impetuous ferocity. When any of the herd happens to be wounded, or is grown weak and feeble through age or sickness the rest of the herd set on it and gore it to death.

The breeds of cattle, as they are now found in Great Britain, are almost as various as the soil of the different districts, or the fancies of the breeders. They have, however, been very conveniently classed according to the comparative size of the horns; the *long horns*, originally from Lancashire, much improved by Mr. Bakewell, of Leicestershire, and established through the greater part of the midland counties; the *short horns*, mostly cultivated in the northern counties; and in Lincolnshire, and many of them found in every part of the kingdom where the farmer attends much to his dairy, or a large supply of milk is wanted; and the *middle horns*, not derived from a mixture of the two preceding, but a distinct and valuable and beautiful breed, inhabiting principally the north of Devon, the east of Sussex, Herefordshire, and Gloucestershire; and, of diminished bulk, and with somewhat different character, the cattle of the Scottish and the Welsh mountains. The Alderney, with her *crumpled horn*, is found on the southern coast, and, in smaller numbers, in gentlemen's parks and pleasure-grounds everywhere; while the polled, or *hornless* cattle, prevail in Suffolk, and Norfolk, and in Galloway, whence they were first derived.

These, however, have been intermingled in every possible way. They are found pure only in their native districts, or on the estates of some opulent and spirited individuals. Each county has its own mongrel breed, often difficult to be described, and not always to be traced—neglected enough, yet suited to the soil and to the climate; and, among little farmers, maintaining their station in spite of attempts at improvements by the intermixture or the substitution of foreign varieties.

The character of each important variety, and the relative value of each for breeding, grazing, the dairy, or the plough, will be considered before we inquire into the structure or general and medical treatment of cattle. Much dispute has arisen as to the original breed of British cattle. The battle has been stoutly fought between the advocates of the middle and the long horns. The short horns and the polls can have no claim; the latter, although it has existed in certain districts from time immemorial, was probably an accidental variety.

We are very much disposed to adjudge the honor to the *middle horns*. The *long horns* are evidently of Irish extraction, as in due place we shall endeavor to show.

Britain has shared the fate of other nations, and oftener than they has been overrun and subjugated by invaders. As the natives retreated, they carried with them some portion of their property, which, in those early times, consisted principally in cattle. They drove along with them as many as they could, when they retired to the fortresses of north Devon and Cornwall, or the mountainous regions of Wales, or when they took refuge in the weald of east Sussex; and there, retaining all their prejudices, customs and manners, were jealous of the preservation of that which reminded them of their native country before it yielded to a foreign yoke.

In this manner was preserved the ancient breed of British cattle. Difference of climate wrought some change, particularly in their bulk. The rich pasture of Sussex fattened the ox into its superior size and weight. The plentiful, but not so luxuriant herbage of the north of Devon, produced a smaller and more active animal, while the privations of Wales lessened the bulk and thickened the hide of the Welsh runt. As for Scotland, it set its invaders at defiance; or its inhabitants retreated for a while, and soon turned again on their pursuers. They were proud of their country, of their cattle, their choicest possessions; and there, too, the cattle were preserved, unmixed and undegenerated.

Thence it resulted, that in Devon, in Sussex, in Wales, and in Scotland, the cattle have been the same from time immemorial; while in all the eastern coast, and through every district of England, the breed of cattle degenerated, or lost its original character; it consisted of animals brought from every neighboring and some remote districts, mingled in every possible variety, yet conforming itself to the soil and the climate.

Observations will convince us that the cattle in Devonshire, Sussex, Wales, and Scotland, are essentially the same. They are middle horned; not extraordinary milkers, and remarkable for the quality rather than the quantity of their milk; active at work; and with an unequalled aptitude to fatten. They have all the characters of the same breed, changed by soil, climate, and time, yet little changed by man. We may almost trace the color, namely, the red of the Devon, the Sussex, and the Hereford; and where the black alone are now found, the memory of the red prevails. Every one who has compared the Devon cattle with the wild breed of Chatterhault Park, or Chillingham Castle, has been struck with the great resemblance in many points, notwithstanding the difference of color, while they bear no likeness at all to the cattle of the neighboring country.

For these reasons we consider the middle horns to be the native breed of Great Britain, and they shall first pass in review before us.

*To be continued.*



## MARKETS &amp;c.

The price of grain in the English market has recovered from the late reaction, and is again looking up. The wheat crop is now ascertained to be under an average throughout Europe, and should the present hostilities in that quarter endure and spread, the prices of breadstuffs must continue to rise. From private accounts recently received from the south of England, we learn that the wheat crop turns out much shorter than was expected at harvest. One correspondent informs us that his wheat is "scarcely worth threshing." Spring grain and hay are generally good, but more or less injured by wet weather. November proved a fine month, and it is said that a very large breadth of wheat has been sown in good condition. The hop crop is moderate, in some places almost a failure, prices rule high, from £10 to £14 per cwt. The *Farmer's Magazine* for December, estimates the wheat crop in the United Kingdom at about *two thirds* of an average. To cover this deficiency some *thirty-two millions of bushels* will be required, which added to the average imports of good seasons, for the consumption of 1854, will probably amount to the enormous quantity of *Seventy millions of bushels*!

In Canada, although spring crops this year as a general rule have been light, our farmers have every reason to be thankful for the amount of prosperity granted them. The wheat crop has been abundant, and of excellent quality. Prices declined somewhat at the close of navigation, but since recent intelligence from Europe, have again reached nearly as high a figure as at any period during the fall, and every indication leads us to believe that present prices must be maintained, if not improved upon, till summer.

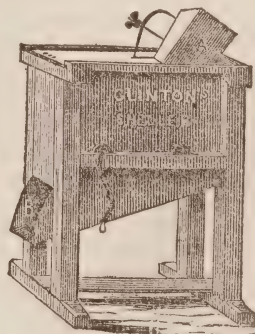
We have no correct data by which to judge of the amount of wheat delivered this season, and of the amount still in the country, as compared with other years, but believe from such information as we obtain from merchants and millers, that while the amount delivered has been greater than usual, the quantity still in the hands of the farmers is as great in proportion to the amount of the whole crop, as is usual at this period of

the year. Full deliveries have been made from the front townships, but in the back townships the greater proportion is still on hand, waiting for sleighing or good winter roads. In Toronto market at present there is, comparatively, but little business doing in flour and grain. Spring grain is scarce, and prices, as well as of wheat, rule extremely high.

Fair deliveries of slaughtered pork are made at prices 5s. a 10s. lower than at the opening of the killing season. Prices lately, however, have slightly improved, 26s. 3d. per cwt. being paid for the best qualities of heavy weight. The display of Christmas beef and mutton in the butchers' stalls in St. Lawrence market, affords a good indication of the prosperous condition of the country, the entire Arcade from one end to the other and almost from floor to ceiling, being hung in all the available space with meat of the choicest quality, and which is selling at highly remunerating prices, both to the producer and the retailer. The display also affords an indication of the good effects attendant upon the spirit of competition engendered by the general institution of Agricultural Societies throughout the country, and by the liberal prizes offered by them; most of the best fattened beef and mutton, and for which the highest prices have been paid, being the carcasses of animals which have obtained prizes at the Provincial, or some of the County Fairs, and produced by farmers who have generally taken an interest in Agricultural Societies.

## CORN SHELLERS.

In the implement of Corn Sheller a great improvement has been made in a few years. Yet many have partially failed, and not a few altogether, making a very inferior article.



THE CLINTON CORN SHELLER, with iron hopper, simply and firmly secured with double spring to suit all sized ears, with balance wheel playing inside, and safe from injury, is best adapted to northern corn, and warranted the most perfect article in the market. With it a bushel can easily be shelled in five minutes.



SMITH'S CORN SHELLER AND SEPARATOR consists of a horizontal toothed cylinder six feet long and one foot two inches in diameter. The ears of corn in the operation, are confined to a part of the upper and rising side of this cylinder, by means of a cast iron concave extending the whole length of the machine, and being shoveled or let in the machine, at one end, they are driven through, and the cobs discharged at the opposite end, while the grains fall below, being admitted on either side of the cylinder. The operation is governed by elevating or depressing the discharged end, which causes the machine to discharge the cobs fast or slow, and of course finishing its work. This machine is capable of shelling two hundred bushels of ears per hour. Hundreds of them have already been sold and they may be seen at work in New York, New Orleans, and in other Northern and Southern cities and towns, where they have given great satisfaction. They are very simple and strong in their construction. Price \$50.

#### BROOM CORN.

From the tenth to the twentieth of May, is the right time for planting this crop. Select the piece of ground most free from weeds, and prepare it as for Indian corn; that is, plough it deep and mellow and harrow smooth. The best soil is a true loam; the best manure, a rich compost, ploughed or harrowed in.

Mark off the rows  $3\frac{1}{2}$  feet apart with a chain or some other contrivance that will only make a mark on the surface, as the seed should not be buried deep or placed in the bottom of a furrow.

**Preparing the Seed.**—It is the practice with the best broom corn growers to pound the seed with a club until the hulls are broken off, when the chaff is winnowed out.

**Proving the Seed.**—By putting a handful in moist earth, kept warm, until it sprouts, is a very good plan. If it all sprouts, be careful in planting not to get too much in the drill.

The stalks should stand about four or five inches apart. Some prefer it in hills, of four or six stalks, twenty inches apart. If too much seed

is planted you will have a task to thin it out. As soon as the rows can be seen, run the cultivator between, so as to cut very close to the corn, as it is important to keep down the grass. The great task is the first hoeing.—*Agricultur.*

#### BALKY HORSES.

Balky, or jibbish horses, are not only a source of great annoyance, but too frequently endanger the property and peril the lives of their owners. An East India gentleman one day took his seat in one of the omnibusses in London, but at the time of starting all the efforts of the driver proved unavailing, owing to a balky horse attached to the vehicle. The poor animal became more and more restive in proportion to the tortures inflicted upon him by the driver, and several other whipmen who assisted on the occasion. The street became blocked up with spectators, and the interception of other carriages. Great danger was to be apprehended. The East India gentleman, above referred to, suggested to the driver and his assistants, that if they would try the East India method of fastening a cord to the horse's fore-foot, and cause a person to pull forward, the animal would start right away. The suggestion was received with contempt. However, after all other efforts failed, a long cord was attached to the animal's fore-foot, and the moment the man gave a strong pull the horse started off as if nothing had been the matter. The philosophy of the case seems to be that the animal, thrown off the centre of gravity by the propulsion forward, is taken by surprise and obliged to start. Try it.—*Rural New-Yorker.*

#### TO CURE SHEEP SKIN WITH THE WOOL ON.

Take one spoonful alum and two of saltpetre; pulverize and mix well together, then sprinkle the powder on the flesh side of the skin, and lay the two flesh sides together, leaving the wool outside. Then fold up the skin as tight as you can, and hang them in a dry place. In two or three days, as soon as they are dry, take them down and scrape them with a blunt knife, till clean and supple. This completes the process and makes a most excellent saddle cover. Other skins which you desire to cure with the fur on, may be treated in the same way.

We can speak in favor of the above recipe. It does all it promises. Such skins make excellent mats for indoors.—*Detroit Farmers' Companion.*

#### CHAPPED TEATS.

The *Prairie Farmer* has the following on the subject of chapped teats in cows:

"I have used various liniments, and many kinds of ointment, but none in my experience came up the mark like *clear cold water*. My practice is to take water to my cattle yard, as much as my milking pail would contain. Every teat, and the lower part of the bag, whether sore or sound, is washed clean. The teats are then soft, the cow stands quietly, and no dirt falls in to your pail.

In Aylesbury the sale of ducks realises £15,000 a year. In Norfolk and Cambridge the small farmers pay their rents with their poultry.



## Literary and Miscellaneous.

WILLIAM McDougall, Esq., Editor.

### EDITORIAL ARRANGEMENTS FOR THE YEAR, &c.

In order to make the *Agriculturist* useful and interesting to all classes of readers, we have secured additional editorial aid in the preparation and selection of matter for the present volume. The Agricultural and Horticultural department will be under the supervision of Prof. BUCKLAND, assisted by Mr. THOMSON, a young gentleman who has had a good practical acquaintance with Canadian farming, and is now assistant Secretary to the Board of Agriculture. The Literary and Miscellaneous department, comprising about eight pages, will be under the direction of Mr. McDougall, the proprietor, who has always given more or less attention to the selection of matter for the *Agriculturist*. By this division of labor, it is hoped to make the paper, as a whole, more generally acceptable. The number of Correspondents, we have every reason to believe, will be larger than during any previous year; and therefore we look forward with some confidence, for the support and approbation of all true friends of agricultural improvement.

The following story may be read with advantage by many fathers and mothers in Canada. The tendency to a premature separation of families, by the discontent and "going off" of its younger members, is not confined to the poor, but is painfully prevalent even among the well to do. We every day hear of young men (often mere boys, and under age) leaving the parental roof to seek their fortune in Australia, California, or elsewhere—an object they never find, but are themselves lost in the search,—and if the true cause of the separation were enquired into, we believe it would be found, in nine cases out of ten, to be the fault of parents. A want of sympathy, harsh treatment, wounded feelings, neglect of those little things that make home pleasant, indifference to the plans and hopes of that future that is opening out to the young and ardent boy,—these, and such as these, are the causes that drive so many promising youths away from their Home, to be wrecked and swallowed up in the great sea of life, before they have learned to shun its rocks and sand-bars.

We have known so many cases—some of a painful kind, entailing sorrow on a whole family—that in-

stead of lecturing the youth, we offer a lesson, in a form that cannot offend, to the fathers and mothers of youth. Why should the boy be checked when he strives to embellish his home to make it pleasant and happy? Let him plant the trees by all means.

### FARMER GOVE AND HIS SON;

OR,

### HOW TO MAKE HOME PLEASANT!

When a young man leaves his home in the country for a less desirable one in the city, or elsewhere, the inference, as a general thing, is either that he is "spoiled" by indulgence on the part of the parents, or by certain influences which may have fallen upon him, led him to despise labor on a farm, and induced him to seek a less laborious and more easy mode of life. That these are not the *only* causes which induce boys to leave a good home and farm, the following sketch may perhaps show.

"I am really very glad to see you, Mrs. Gove, this afternoon. Do you know it's nearly a whole year since I have had this pleasure, and you my nearest neighbor?"

"I did not think it was so long, but—but, I have a great deal of care."

"Yes, you certainly must have. Let us take our work and sit on the piazza; it is much cooler there and secluded from the sun."

"Can we see our meadow from there, Mrs. Norton?"

"Let me see—O, yes, very well."

"Mr. Gove, with the men and Willie, have gone down to the lower field fencing, and he wished me to have an eye on the meadow, as that fence is all down and our cattle are in the road. I see you have finished planting, Mrs. Norton. You have everything done in season, and yet you never seem hurried or fretted. You must take comfort."

"Why, as to that, we feel that there is nothing worth doing, but is worth well doing; and feeling thus, we own but little land, a small farm compared with yours, and we find no difficulty in having our work done at the right time."

"Yes—and I can hardly realize, Mrs. Norton, that this is the same place where I played, when a child, 'tis so changed; these handsome trees—why in this spot twenty years ago a sand bank 'twas, in which nothing grew but dock and tansey. I used to get the double tansey for grandmother, to color her cheese with. I am not surprised that my Willie, should say, as he did to-day, that he was never so happy as when he was under the ash tree down by the spring. Really, Mrs. Norton, that is the only one near our house, and that is fast going to decay. You have vines, trees and shrubs, and beautiful flowers; why, it seems to me these things must tend to make home pleasant."

"You are right, Mrs. Gove; we feel that by cultivating a taste for the beautiful in nature, we improve the character and soften the heart."

"I know you are right, and not for my sake, but on Willie's account, I wish I could make Mr. Gove think as we do. But perhaps I do

wrong to speak in this way, for Mr. Gove has more care now than any one man ought to have, and I know that he has no time for anything but barely to take care of what he has, without making any improvements. But I am in hopes when William grows up, that he will get time to set trees and make our home pleasant, for a more ardent lover of nature I surely never saw."

"Mrs. Gove, of course your husband knows his own business, but I've often thought that it would be for your interest all round, if your husband had less land to care for. I mean, if he would sell some, it certainly would lessen his care as well as your own."

"Perhaps so, but really Mr. Gove doesn't think it looks just right for a man to part with property which has been handed down from father to son, until it is now in the fourth generation.—'Tis true I have a good deal of care, and must work hard, but I have no reason to complain, though 'twould be very nice, what little time I have to sew, to sit in such a cool, delightful place as this. Perhaps I am all wrong, and think too much of these things."

Mrs. Gove was returning from the visit to her neighbor, which they had mutually enjoyed, when a pat on the shoulder caused her to exclaim, "Are you tired, Willie?" as she gazed earnestly at that pale face, and sought to read the language of those dark and handsome eyes. "Are you tired my dear?"

"Yes, mother. O, I am very tired; for don't you think after I had helped father as long as he had anything for me to do, I went into that pretty grove where Sis and I played the week before she died, and there right by a little mossy bank, was a little larch tree, and mother, I wanted very much to dig it up and bring it home, and set it out by your bed-room window. I am sure, mother, it would look beautifully there, and then I never could see it without thinking of little Alice."

"Did your father take it up for you?" said Mrs. Gove, as she strove to force back the tears that would come.

"No mother; I took the spade and tried; I dug all round it, but I couldn't start it a bit, when I tried to pull it up, and I asked father if he would let Mike take it up for me. You know, mother, that Mike is a good hand, for he helped take up and set out all Mr. Norton's trees."

"And what did your father say, my dear?"

"He said, 'don't be foolish, child—we've no time to fool away,' or something of that kind. I wish I had strength to pull it up; but I don't know as father would let me set it out. Do you think it is foolish, mother?"

"My dear child, your father has a great deal of care and anxiety, and you heard him say this morning, when a man called to tell him his fence all lay flat, and everybody's cattle were in, that his work was driving him continually; so perhaps father thought 'twould be wrong to spend the time that is now so precious to us, in doing what we could get along without doing."

"Well, mother, does father take much comfort? He is always behind hand, and he never finishes all the jobs he begins. Why, don't you know last summer we had so much to do that we

did not get time to hoe that piece of corn between the woods, and I heard father say myself, that it did not begin to pay for the plowing. And mother, you know I heard it talked over at the store, how father had to pay for a strip of land he bought of Mr. Chase, twice, because he did not get time to make the deed, and Mr. Chase died before 'twas done. When I hear people say to father, 'you are the richest man in town,' or 'you own the most land,' why, I think, well, I don't see as father is any happier than the neighbors, that haven't half as much. Why, I heard father say to-day that he was harassed to death."

The night after the above conversation, as Willie was quietly sleeping, and Mr. Gove sat with his arms folded, and his eyes resting on the wall, Mrs. Gove asked her husband, in rather a timid tone, if he had noticed how fully Mr. Norton's fruit trees had blown.

"Well, I believe I saw them, or heard some one speak of it. But I am tired."

"Yes, I think you must be, you have worked hard all day."

"I have worked like a dog, and what does it amount to?"

"Do you think," said the wife, "considering we have to work so hard and hire so much help, that it is for your interest to keep all the land?"

"Think—I don't think anything about it. I've got it, and I must take care of it. I should look well spending what has so long been in the family. As long as property is in hand it is safe; but change it into money, or any thing else, and ten to one 'tis soon gone, nobody knows where."

"Perhaps you are right; but it seems to me you could take much better care of less, make it more profitable, and at the same time relieve yourself of this care and anxiety, which I fear is wearing upon you. And then you know William is slender. I don't think he'll ever be able to work as hard as you have done."

"He never will, if he is brought up to think he is too good to work. He has notions in his head now that I fancy will do him no good. You have been over to Norton's this afternoon. I suppose his wife advised you what was best for us to do. Why, Betsey, can't you see through it all? They have been and sold half of their farm, and laid out the money in trees and I don't know what all,—sent the boys to school instead of teaching them to work and so she wants us to do the same. Ha! ha! misery likes company.—The long and short of it is, Betsey, Mrs. Norton wanted to get rid of work. I wish they had sold the whole concern and cleared out, for I plainly see you nor William can go over there but it bewitches you. No—you never will see me covering my land, or surrounding my house with *boughten* trees. If I had time I should like well enough to set out a maple or something near the house. I should like one or two for the horses to stand under; but I haven't the time, neither do I think it best to encourage any such notions in the boy. You know how it is—"if you give an inch they'll take an ell." He begged hard for us to dig up a larch this afternoon, but indulgence will spoil any child. If I had done it for him, why he would only have wanted more, and if he



got too many such notions, why he is so headstrong, and the first we should know he would be off like others we know of. No; the only way to get along with children is to be *strict*; no arguing with them, and no giving way to their foolish wants."

"Do you think it was indulgence that made George White go to New York? I don't know but what it might be, his mother was dreadful careful of him."

"I should like to know what 'tis makes boys leave their fathers' home and farms and go off to the city, and barely get their board, if it is 'nt letting them have their will and way."

"I have no doubt that over indulgence begets self-will, and overcomes a child's sense of duty, so that restraint is thrown off, and parental obligation disregarded; but, husband, I do believe one thing, and that is, if we wish Willie to love his home, we must make it happy; if we wish his warmest affections to cluster around this place, we must make it attractive. You think the Norton boys are indulged too much, but this indulgence is nothing more than a desire on the parents' part, judiciously carried out, to make them useful and happy. And I believe they take the right course. No children love their home better than they do. Mrs. N. tells me that it is with the greatest reluctance that they leave home in the vacation, to visit their country cousins."

"Well, well, don't say any more, for I have as much as I can do to get through the day's work and I for one want to sleep in the night! Mrs. Norton is welcome to her notions and I will have mine!"

While Mr. G. is wrapped in the "sweet sleep of the laboring man," and Mrs. G. is revolving in her own mind the many different plans which suggest themselves to a mother's ever watchful heart, for the good of her boy, let us take a peep at the character of both parents and child.

Had a stranger inquired of almost any one in N., "what sort of a man is Mr. Gove?" the answer would probably be to this effect:—"Fine man, sir, upright, honest, and firm; *trifles* don't move him, sir." Granted—but let us see if there can be, with these good qualities, nothing wanting.

Mr. G. was stern; in this view, the "*smooth-ing over*" of an affair was never advisable.—Willie, as a child, had much to contend with in the way of passion, pride, and self-will; like almost all children occasional acts of thoughtlessness and hasty impulse led him into error and its painful consequences. Had his father been careful to "do justice to his better qualities, while at the same time he blamed and convinced him of his faults," all might have been well; but Mr. G. never met his errors in "love and conquered them by forgiveness." Unjust harshness actually confirmed him in error. Mr. G. was spoken of as a generous man, but to use the beautiful language of one departed, "There are those who are lavish in attention and presents to friends, but who never imagine that their own home circle has the first and strongest claim to kindness, whether of word or deed. Affections

and thoughts lavished on comparative strangers, never radiate on home; but when given to home first, they shed light and kindness far and near." Mr. G. never won the heart of his child. How was it with the mother? She possessed the rare combination of "gentleness with firmness, submissiveness with dignity." Her anxious desire was to do justice to his better feelings, and while she wished to educate his mind, she was more anxious that his heart should be won and taught.

But little change, outwardly, was visible in the Gove family when William had reached his eighteenth year. The homestead remained the same—save some marks which "Time's effacing fingers" had not failed to make. The "ash tree," by the spring, was gone, and the maple "for the horse to stand under" had never been "set out."

One fine morning in May, William asked his father if he might have the sorrel horse to go to the village adjoining. Permission was given on condition that he would return before dinner.—Dinner came, and with it came William.

"What has our William been doing?" exclaimed Mr. Gove, as he gave a hasty glance at the window. "Cutting a waggon load of withes!"

"I don't know, but I can't see very well without my glasses."

'Twas easy to see, however, that that hasty glance had ruffled the smooth current of his thoughts, for he at once knew that withes needed no roots. William took out the horse, wheeled the wagon into the shed, and entering the long kitchen seated himself at the table. The mother with her quick perception failed not to understand why that shadow rested upon the father's brow. Hardly a word was spoken—Mr. G., upon leaving the table, took up a newspaper, a thing which he rarely had time to do; it was evident to Willie, however, that he was not reading very intently for the paper was upside down. When William left the house he went directly for the spade and hoe, and walking deliberately down the hill side, south of the house, commenced making holes twelve feet apart, where he had helped his father plow the day before. He had thus been engaged half an hour, when rising to wipe the heavy drops of moisture from his forehead, he saw his father looking earnestly at him.

"What are you doing, William?"

"I am fixing places to set out trees."

"What kind of trees?"

"Peach and pear trees, sir."

"Where did you get them?"

"I bought them at a tree auction, to-day."

"You did! Well you can't set them here, sir."

"I can't—what's the reason?"

"There are reasons enough, though I'm under no obligations to tell children; yet I won't be particular this time. In the first place, I wish you to understand once for all, that you take one step too far when you buy trees without leave or license, and more than that, proceed deliberately to put them on my best corn land. And now you can do what you please with the trees. You have taken far too much liberty. You shall never set them on my land."

Without one word, William shouldered his spade and walked to the house. His mother, who stood at the corner window, although she had heard no word spoken, understood the whole affair perfectly. She saw William shoulder the spade, and then her heart beat heavily, but quickly raising the corner of her apron, she wiped the tears which were fast falling, and met her son with a smile.

"Well, mother, I've done," said he as he sunk on the old kitchen chair, "I've done trying to be anything here. He won't let me be anybody."

"My child, don't speak so disrespectfully of your father. He, Willie, that sounds dreadfully; never say that again my son."

"I can't help it, mother, I shan't stay here. You know what I told you last week, mother, and to-day I have had something come across my feelings, harder to bear than all. When I was coming from the village, I met a man with a double waggon, and a beautiful larch tree in it. I was hoping to buy it, so I asked him where he got it, 'Squire Gove gave it to me,' he replied. O, mother, wasn't that too much? I asked him who took it up, and he said his Irishman that he called Mike. I could have torn that tree in splinters, mother. I rode round by the grove, and sure enough 'twas gone and the mossy seat all trampled and torn. Do you think after that I would ask him to let me set out the trees? No, mother, if father can do without me I can do without him.—I shall go away as soon as you can get my things ready. Of course the folks will say—'What an ungrateful boy to leave his father alone,' but why can't father try to please me as well as others—as well as strangers? There are the Norton boys—if father had done one-quarter for me that their father has done for them, I should be very, very happy. O, mother don't feel so bad—you must not blame me. I know you are a real Christian, mother, but I ain't like you—you overlook and forgive everything. I'm some like father; I wish I was just like you."

William expected his mother would entreat him to stop at home, but no, not one word did she say in favor of it. She knew these were little things to cause the boy to leave the home of his youth for a home among strangers, but she knew also that the joys and griefs at home are almost all made up of little, very little things.

We will hasten over the particulars of William's leaving home, and only say that his father's parting words were, "I can do without you as long as you can do without me, William." In four weeks from this leave-taking, William was a waiter on board a Mississippi steamboat.

Mr. Gove hired an extra hand;—many people shook their heads meaningly, and said it was a pity, a great pity, but nothing new or strange, for an only child to be spoiled by indulgence; but then he was a pretty, bright boy, and they supposed it came hard to punish him, but "spare the rod and spoil the child," was scripture.

The summer was passed, the golden grain was garnered, and the rich fruits secured, when Mr. Gove, who had grown somewhat moody of late, called Mike to the back door, and giving him

some directions, took his hat, and passing out the other door, joined him.

"Let me see, you have the spade and hoe. Well, now, come down with me to the side of the hill where the early corn was planted, and do you remember where the holes were, that William made last spring?"

"And sure 'tis not me that's afther forgetting sich things, for didn't I put a flat stone by every hite of 'um; and didn't I in hoeing and harvest keep them from being shoved a bit? For do you mind, sir, I set a dale by the boy—he wouldn't hurt a baste, sir, and his heart is as big as a whale."

"Well, well, that's enough, Mike. Now you bring all the trees you buried in the swamp, and set them out just as you did Norton's, and do you know which were the trees designed for the holes William had opened?"

"And faith I mind it well, for didn't I tie a string round 'um, jes so."

Mr. G. took the arm-chair, and moving it to the bed-room window, seemed lost in thought. Surely, he must be sick, for he was never known to sit down of a week day except at meal times.

Two hours passed and Mike was passing the window, when he was thus accosted by Mr. G.: "Have you done, Mike?"

"Sure, sir, a plesant job to me, I was lazy to quat it."

"Now take your spade and prepare a place by this window, where you see I've placed the stick, for a larger tree. Now if you have it right go over to Capt. Burns' and ask him if he will sell me that larch tree in the west corner of his birch lot. Tell him the price is no object, and be careful you don't break any of the small roots; be careful, Mike."

"No fear o' that, sir."

"Stop, that is not all. When you come home, call at Smith's, and tell him I have concluded to come over this afternoon and Squire Norton will be here to fix the writings.—Tell all who enquire for me that I am sick."

Before night one-third of Mr. Gove's land was in Mr. Smith's possession, and the deed on record. The larch seemed quite at home by the bed-room window.

And now what strange spell was this upon Mr. Gove.

"O, there are moments in our life  
When but a thought, a word, a look has power,  
To wrest the cup of happiness aside  
And stamp us wretched!"

The evening before, Mr. G. chanced to take up a school-book of William's, and on a blank leaf were written in a neat school-boy hand, these simple lines:

"'Tis the last blooming summer these eyes shall behold  
Long, long, e'er another, this heart shall be cold;  
For O, its warm feelings on earth have been chilled,  
And I grieve not that shortly its pulse will be stilled."

Mr. G. dropped the book, and wandered he hardly knew whither, till he found himself in the swamp where William's trees were buried. What followed the reader already knows.

Mrs. G. had finished her day's work, and was seating herself in the little rocking chair, when Mr. G. called to her from the bed-room



"Betsy, will you sit in here? I want you to write a letter to William to-night."

"To-night! Why it is after nine o'clock!"

"I know it, but I shall feel better if it is done to-night. I feel sick all over and perhaps I am nervous."

"I will write what you wish me to my dear husband."

"O, don't say so—but tell Willie I wish him to come home without delay; tell him for the love he bears his mother, and for the love *I bear him*, to come now. Say that my hand trembles so I can't write this, but I say it from my inmost heart."

"And now, Betsy, I will try to ask God to watch over that boy, and to soften my own proud heart."

"O! when the heart is full—when bitter thoughts  
Come crowding thickly up for utterance,  
And the poor common words of courtesy  
Are such a very mockery—how much  
The bursting heart may pour itself in prayer."

June, beautiful June, the "month of roses," found Mr. G. in that "old arm chair," by the bed-room window, but O, how changed!

"His hair was thin, and on his brow  
A record of the cares of many a year,  
Cares that were ended and forgotten now."

It was the last day of his earthly existence. The gentle breeze as it swept through the light foliage of that beautiful larch caused him to open those eyes so soon to be closed forever—and as they met for the last time on earth those of his own Willie, upon whose arm his head rested, he whispered, "I die happy now," and the scene of life had closed.

### THE POETRY OF AGRICULTURE.

The principles of agriculture are exceedingly simple. That they might be so, God himself was the first great planter. He wrote his laws visibly in the brightest, loveliest, and most intelligible characters, everywhere, upon the broad face of the liberal earth, in the greenest leaves, in delicious fruits, in beguiling and delicate flowers. But he does not content himself with this alone. He bestows the heritage along with the example. He prepares the garden and the home, before he creates the being who is to possess them. He fills them with all the objects of sense and sentiment which are to supply his moral and physical necessities. Birds sing in the boughs above, odors blossom in the air, and fruits and flowers cover the earth with a glory to which that of Solomon, in all its magnificence, was vain and valueless. To his Land were these fine groves, these tall ranks of majestic trees, these deep forests, these broad plains covered with verdure, and those mighty arteries of flood and river, which wind along, beautifying them with the loveliest inequalities, and irrigating them with a seasonable fertilization.

Thus did the Almighty planter dedicate the great plantation to the uses of that various and wondrous family which was to follow. His home prepared—supplied with all resources, adorned with every variety of fruit and flower, and checkered with abundance, man is conducted

within its present limits, and ordained its cultivator under the very eye and sanction of heaven. The angels of heaven descend upon its hills. God himself appears within its valleys at noon-day; its groves are instinct with life and purity, and the blessed stars rise at night above the celestial mountains to keep watch over its consecrated interests. Its gorgeous forests, its broad savanahs, its levels of flood and prairie, are surrendered into the hands of the wondrously favoured; the new created heir of heaven. The fowl summons him at morning to his labours, and the evening chant of the night bird warns him to repose. The ox submits his neck to the yoke; the horse moves at his bidding in the plough; and the toils of all are rendered sacred and successful by the gentle showers and the genial sunshine which descend from heaven, to ripen the grain in its seasons, and to make earth pleasant with its fruits.

### GENIUS AND TALENT CONTRASTED.

Genius is the native breath of the most richly endowed, luxuriating in everything beautiful and fair—the inspired vision which makes the future present, and the distant near,—a lingering reminiscence of the infinite ocean from which we all emerged, and a vivid prognostic of an eternity to come. It is a rare possession, the line of demarcation between the highest form of the intellectual and the lowest form of the divine, causing its possessor to be a "maker" of things, most like God; a "declarer," who speaks the highest law in tones like the sound of many waters, and with a splendor as pure and pervading as the light of heaven.

It is the quality of genius to flow, while plodding talent has a constant tendency to freeze. He who is blessed with the first, passes through life as a broad and placid river traverses continents, and, in its calm but irresistible course, reflects every natural charm. Ben Johnson possessed an extraordinary opulence of thought; but it was the produce of the amassing power of talent, not, as in Shakspeare, the creative power of genius. Materials which, in the hands of talent, are but herbs and crude metal—papyrus and bronze—by the magical touch of genius are elevated into stupendous architecture, temples that outlive the Pyramids, around which the deluge of ages roars in vain.

Talent accomplishes results with slow toil, like Caliban; while genius works its spontaneous wonders like the wand of Prospero. The traces of talent are discovered by the searcher after excellence; but genius strikes us like the lightning, without the eye being obliged to look for it. It illumines everything with its own broad, clear flash. Genius is daring, thinks for itself, and pursues its ends out of the beaten track; while talent plods on after the manner and dictum of others, and is applauded only by critics of the same taste and mental calibre.

Talent takes impressions from beautiful objects; genius creates its own originals. Talent collects data, and from them deduces conclusions; genius overleaps the intermediate process,

and reaches the same result by intuition. Newton had genius, and it discovered the law of gravitation; he also had talent, and with this he proved it. The higher attribute is necessary to render one great in his own presence; the other must be employed to render one useful to the world. Without the sun, the universe is a chaos; genius kindles an original flame, and talent walks in the light thereof.

#### INFLUENCE OF OCCUPATION ON LIFE.

One of the most interesting departments of the Registration Reports published annually by the State, is that which relates to the influence of occupations on the duration of human life. In the last report, which is now before us, there are tables exhibiting the average ages and vocations of persons over 20 years of age, who have died during 1851, and also exhibiting the same for a period of 7 years and months, viz., from May 1, 1843, to December 31, 1851. Taking this last as our guide, we find that the average duration of life in Massachusetts is as follows:

Agriculturists, - - - -	64.02
Laborers, - - - -	45.10
Mechanics, - - - -	46.01
Merchants, - - - -	36.12
Paupers, - - - -	67.52
Professional Men, - - -	48.46
Public Men, - - - -	50.00
Seamen, - - - -	43.07
Average, - - - -	51.94

The longest lives are distillers, whose average age is over 74. But six men of this profession however, have died within the time embraced by the tables. Pilots stand next, their average ages being nearly 72 years. Weighers and Gaugers live 70 years, omitting fractions; Gentlemen 68; Caulkers and Gravers; Judges and Justices, 65; Bank Officers, Sheriffs and Constables, 62; Millers, 60; Coopers, 58; Tobacconists, 57; Lawyers, Sailmakers, Shipwrights, Setvedores and Sextons, 55; Tallow-Chandlers and Hatters, 54; Wood Turners, 53; Millwrights, 51; Carriage-makers and Riggers, 50; Carpenters, Tanners, Brokers and Soldiers, 49; Innkeepers and Grocers, 48; Butchers, Druggists, Masons, Paper-makers, Wheelwrights, Cooks and Victuallers, 47; Expressmen, Traders and Cabinetmakers, 46; Leather Dressers and Weavers, 45; Watchmen, Booksellers, Tailors, Harness-makers, Founders, Bakers and Ticket Masters, 44; Brick-makers, Furnacemen, Manufacturers, Shoemakers and Wool Sorters, 43; Silversmiths, Painters, Bookbinders, Cardmakers, Smiths and Jewellers, 42; Artists, Stablers and Teamsters, 41; Musicians and Well-diggers, 40; Cigar-makers, Dyers, Upholsterers and Glass Blowers, 39; Engravers, Whipmakers and Drivers, 38; Drovers, Teachers, Civil Engineers, Peddlers and Printers, 37; Machinists, Tinsmiths and Comedians, 36; Editors, Chimney Sweeps and Confectioners, 35; Shoecutters, Railroad Agents and Conductors 34; Clerks, Dentists, Engineers and Firemen, 33; Operatives and Reedmakers, 31; Piano Forte makers, 31; Powdermakers, 30;

Stove dealers and Baggage Masters, 29; Fencing Masters, News Carriers and Cutlers, 28; Brake-men, 27; Students, 23.

Among females who are engaged in regular occupations, the longest lived are nurses whose average age is 55; next come Housekeepers, 55; Shoebinders, 45; Seamstresses and Domestic, 43; Tailoresses, 41; Strawbraiders, 36; Milliners, 35; Dressmakers, 32; Teachers, 28; Operatives, 26. The average age of the above classes of females is 46.78 years, which is five years and sixteen-hundredths less than the average of the males.

The tables from which we have gathered the foregoing facts extend over a sufficient period of time to enable us to deduce some important conclusions. In the general divisions of occupations, it will be seen that the agriculturist stands first on the list, in length of life, the average age of this class being no less than 64 years. This is fully twelve years above the general average, and nearly nineteen above the average age of those returned as laborers; and eighteen per cent. above that of mechanics. But when it is considered that none are embraced on the table who died prior to their 21st year, the difference is really much more important. Starting, then, at the commencement of the 21st year of life, the farmer has the prospect of 44 years before him, while the shoemaker has only the prospect of 23. Next to agriculture, there are probably more of our citizens engaged in shoemaking than in any other occupation. In 1850 there were 55,082 farmers in the State, and 31,944 shoemakers. The carpenters number only one half as high as the shoemakers. The latter form so important a part of our industrial community, that the question may well be raised whether means cannot be devised to diminish the unhealthy tendencies of their labors. The mortality among shoemakers, we suspect is to be ascribed as much in the small, and overheated and unventilated rooms in which the trade is generally pursued, as to the sedentary nature of the employment itself. Large workshops, well ventilated, and with temperature regulated by the thermometer, would do wonders for our friends of the lapstone. A little garden-patch in addition, just large enough to scratch round an hour or two each day, would doubtless add much to the value of the prescription.—*Boston Paper*.

#### CERASUS ILICIFOLIA.

The San Diego *Star* thus describes a California tree, supposed to be very suitable for a shade tree: There is a tree in the mountains, not far distant, known in botany by the above title. As its name indicates, it is a species of the cherry. It belongs to the family of evergreens, and flourishes in dry localities, growing to the height of ten and twenty feet. It bears a nut, the kernel of which is pleasant to the taste and resembles almond. The foliage is not dense, but is of a dark living green upon the outside, while the underside has a whitish tint, and as it is moved by the winds, has a tremulous, lively appearance. We believe it could be easily propagated, not only by transplanting but by the seed.



## THE INGLEBOROUGH CAVE IN CLAPDALE.

For about eighty yards from the entrance the cave has been known immemorially. At this point Josiah Harrison, a gardener in Mr. Farrer's service, broke through a stalagmical barrier which the water had formed, and obtained access to a series of expanded cavities and contracted passages, stretching first to the north and then to the north-west, afterwards to the north and then to the north-east, and finally to the east, till, after two years spent in the interesting toil of discovery, at a distance of seven hundred and two yards from the mouth, the explorers rested from their labours in a large and lofty irregular grotto, in which they heard the sound of water falling in a still more advanced subterranean recess. It has been ascertained, at no inconsiderable personal risk, that this water falls into a deep pool at a lower level, beyond which further progress appears to be impracticable. In fact, Mr. James Farrer explored this dark lake by swimming—a candle in his cap, and a rope round his body. In this long and winding gallery, fashioned by nature in the marble heart of the mountain, floor, roof, and sides are everywhere intersected by fissures which were formed in the consolidation of the stone. To these fissures and the water which has passed down them we owe the formation of the cave and its rich furniture of stalactites. The direction of the most marked fissures is almost invariably north-west and south-east, and, when certain of these occur, the roof of the cave is usually more elevated; the sides spread out right and left, and often ribs and pendants of brilliant stalactite, placed at regular distances, convert the rude fissure into a beautiful aisle of primæval architecture. Below most of the smaller fissures hang multitudes of delicate translucent tubules, each giving passage to drops of water. Splitting the rock above, these fissures admit or formerly admitted dropping water. Continued through the floor, the larger rifts permit or formerly permitted water to enter or flow out of the cave: by this passage of water, continued for ages on ages, the original fissure was in the first instance enlarged by the corrosive action of streams of acidulated water; by the withdrawal of the stream to other fissures, a different process was called into operation. The fissure was bathed by drops instead of by streams of water, and these drops, exposed to air currents and evaporation, yielded up the free carbonic acid to the air and the salt of the lime to the rock. Every line of drip became the axis of a stalactical pipe from the roof; every surface bathed by thin films of liquid became a sheet of sparry deposit. The floor grew up under the droppings into fantastic heaps of stalagmite, which sometimes reaching the pipes, united roof and floor by pillars of exquisite beauty.—[The Rivers, Mountains, and Seacoast of Yorkshire, by John Philips, F.R.S.]

## WHERE ARE OUR TREASURES?

In judging of the state of the heart—of the moral attitude of its purposes and affections,—we can ask ourselves no more important and search-

ing question than this:—Where are our dearest prized treasures deposited? For the Saviour has declared in one of those brief utterances which command at once the assent of every reflecting mind,—“Where your treasure is, there will your heart be also!”

Where are your treasures? let all ask who read these paragraphs. Are they hidden in earthly coffers, are they placed on earthly wisdom or honors? If so our hearts are fixed on transitory things; they dwell in the strong box where our wealth is hoarded, they are bound up with the honors we have gained, or have become a part of the wisdom of which we pride ourselves. Our hearts have no home but with the earthly and fleeting; they live with their empty, vanishing honors, with their wisdom which proves folly in the light of eternity, or with their wealth which takes wings like a frightened bird, fleeing at once and for ever away. Nor can one of these valued possessions prove of any worth beyond the present existence. Death strips us of all treasures laid up in earthly coffers. If moth and rust corrupt not, and no thieves steal away, yet an hour comes when all must be left behind, and the heart be ushered into the eternal world, naked, poor—with none of those possessions which it has hitherto made its pride and solace—its hope and stronghold in its earthly journey.

Where are our treasures? let us ask again. Some who read are of those who have looked upon the earth and everything it esteems, and found nowhere a worthy home for the heart and the riches most to be valued. The admonition, “Lay up for yourselves treasures in Heaven,” we have thought that of wisdom, and through the grace of God gave heed thereto; and our treasures are safe with Him, beyond the reach of moth or rust or prowling thief, and there our hearts are also. We love to contemplate the riches of love Divine, which even now are ours, and the priceless joys we shall soon inherit in the chosen home of our hearts, where is laid up that “pearl of great price”—the hope of eternal life.

Who would not “lay up treasures in Heaven? They are safe there, and though we enjoy them continually, they shall increase thereby. The heart need never fear of becoming bankrupt which has there its treasures in deposit.

## HOUSE PLANTS IN WINTER.

“What is the reason that my plants do not grow as well as Mrs. Jones’? I am sure I take a great deal more pains with them, and water, and nurse, and air them, but all will not do; they are weak, slender, sickly, and some of my best plants have died—while Mrs. Jones seems to take very little care of her’s, and yet they grow and bloom beautifully!”

This appeal to us for aid and advice, which has just been made, is not the first complaint of this kind of ill-success. The truth is, some plants are actually nursed to death. Care and attention bestowed on plants, *which they do not need*, are worse than no care at all. It is knowing *just what to do*, and doing that, and no more, that gives some persons their success. Or, as a late writer remarked, there are two great points to be

attended to:—1, Not to let your plants suffer by neglect; and 2, not to make them suffer by interference. We would class the requisites for good treatment as follows:—

1. Plenty of light.
2. A due supply of water.
3. Proper temperature.

Fresh air, cleanliness, and good soil, are obviously of importance, but are less likely to be neglected than the three first named wants, and we shall therefore add a few additional remarks under these heads.

1. *Light*.—Plants cannot by any possibility have too much of this. The stand should therefore face the window, and be placed as near to it as practicable; and the window should be broad, as little obstructed in its light by outside trees as the nature of the case will admit. But rapidly growing plants require most light; hence should be placed more directly in front of the window.

2. *Water*.—This must be given according to circumstances. A plant in nearly a dormant state, needs very little—those in a rapidly growing condition require considerable. Too much water will make the latter grow slender, but they will bear a greater supply if in a strong light. It must be remembered as a standing rule, that dormant plants may remain comparatively in the dark, and with little water; and growing ones should have a good supply of water, and a full supply of light. But it must not be forgotten that green-house plants generally are nearly dormant during winter, and the soil must therefore, be kept but moderately moist, as the plants in this condition do not pump any moisture from the soil, and little escapes directly by evaporation.—Drainage, by filling one-fifth of each pot with charcoal, is of importance.

3. *Temperature*.—Many house plants are destroyed by too much heat, which increases the dryness, and both of these causes together are more than they can endure. A cool room, never as low as freezing, is best. From 50 to 53 degrees is much better than 65 to 70, the ordinary temperature of living rooms.

Syringing the foliage with tepid water, to wash off whatever dust accumulates, is of use; and the admission of fresh air, when there is no danger of chilling or freezing the foliage, should not be neglected.—*Alb. Cultivator*.

#### THE LARGEST TREE IN THE WORLD.

There is a cedar tree growing in the mountains of Calaveras county, about 20 miles north-east of Murphy's, which is said to be the largest tree in the world. A correspondent of the *Sonora Herald*, who recently made an excursion to see it, thus describes it:—"At the ground its circumference was 92 feet; four feet above that it was 88; and ten feet above that it was 61 feet in circumference; and after that the tapering of the shaft was very gradual. Its height, as measured by Capt. H—, is 300 feet, but we made it but 285. This tree is by no means a deformity, as most trees with large trunks are. It is throughout one of perfect symmetry, while its enormous proportions

inspire the beholder with emotions of awe and sublimity. Elegance and beauty are inseparable concomitants of its grandeur. I have said this is the largest tree yet discovered in the world. It is so. The celebrated tree of Fremont would have to grow many centuries before it could pretend to be called anything but a younger brother. It is said that a tree was once found in Senegal, in Africa, whose trunk measured 90 feet in circumference. But no one has ever been able to find it since its first discovery. It is called by the natives 'baobab;' by botanists, 'Adansonia digitata.' But it is admitted that none can now be found with a circumference greater than 81 feet. There is a tree in Mexico, called the 'taxodium,' which is said to be 117 feet in circumference, but some have said that it is formed by the union of several trees. The height of all these foreign trees is not more, in any case, than 70 feet; and none of the trunks are more than 10 feet. The age of the mammoth cedar of California, if each zone may be reckoned one year, is about 2,520 years. A section of the wood which I brought home with me, exclusive of the sap, which is but little more than one inch thick, numbers about 14 zones or grains to the inch. At that rate, if it were permitted to grow, it would increase its diameter one-seventh of an inch every year. In 84 years its diameter would be increased one foot; in 840 years 10 feet—so that it would then be 40 feet in diameter, and 120 feet in circumference. This giant of the woods and of the world is to be flayed, literally. The patriotic process has already commenced. We understand that the bark, which is at the base 14 inches thick, is to be taken off in sections to the height of 20 feet, and sent to the World's Fair in the city of New York."—*New York Tribune*.

#### CLIMATE AND SOIL OF OREGON.

The following extract from a letter written by a lieutenant in the 4th Infantry, United States Army, stationed at Columbia barracks, Oregon Territory, dated on the 4th of March last, cannot but interest our readers:—

"This is certainly the most delightful climate in the world; never cold in winter, and the heat of summer never oppressive, with very few exceptions, perhaps one year in six. The cattle of all kinds find plenty of grass to keep fat upon the entire year; the last thing a farmer thinks of is making provisions for feeding his cattle in winter. The soil is remarkably rich and yields enormously—fifty bushels of wheat, or four hundred bushels of potatoes, per acre; for the former they get \$6, and for the latter \$2 per bushel; so you see farming is a lucrative business. The country is remarkably adapted to grazing, from the fact stock seldom requires to be fed. Sheep do not thrive so well in the immediate vicinity of this place; but nearly all that section of the country washed by the waters of Puget Sound and its tributaries is represented as being a very fine sheep growing part of Oregon. The emigrants are turning their attention to that portion of the country; many that came over last fall and have not yet located themselves, are waiting an opportunity to go there and settle."



## SAW MILLS.

The old method of making boards and plank was to split up the logs with wedges, and then shape and smooth them with the axe. A great improvement upon this method was to saw the logs with a hand saw driven by two men,—the same method now in use in some ship-yards, to saw particular boards and planks. The log to be sawed is placed upon “ways,” or stagings, erected over “pits,” or trenches in the ground. The saw used is about the length of the cross-cut saw, the plate straight on either edge, wider at one end than at the other, and a stationary handle at the wide end composed of a round piece of wood some foot and a half or two feet in length, an inch and a half in diameter, and placed at right angles to the plate. The narrow end of the saw has a handle to be “shipped or unshipped,” at will, so that the saw can be drawn, or thrust through the saw-kerf, at pleasure. In using this saw, one man stands upon the log with the stationary handle in his hands, while his assistant stands in the “pit,” or trench,—and in this position they ply the saw up and down, making slow progress through the log.

In this manner, boards and plank were sawed almost universally in Europe, as late as 1500, and few were known in France even, for half a century after that date. As late as 1555, an intelligent Englishman travelling in France, saw a saw-mill for the first time in his life, and described it as a very great curiosity. More than a hundred years subsequently, in 1663, a venturesome Dutchman introduced the first saw-mill into England, but an infuriated mob of “sawyers,” and their friends, broke up the mill, and forced the Dutchman to flee the country.

Saw-mills were introduced into the English colonies, however, at an earlier date. As early as 1633 one was set up at Newichewannock, now Berwick in Maine, by Ambrose Gibbin, the Agent of Mason & Gorges. This was the first mill erected in Maine, now boasting more saw-mills, and of nicer make, than any other country. But in England, they still *see-sawed* on in the old way, and in 1753, twenty years after a saw-mill had been built up here in the wilderness in what is now old Derryfield, there was not a saw-mill in England. In that year an extensive timber-merchant erected one in England, but the infuriated populace tore it in pieces. In fact, such is the prejudice in England against the introduction of labor-saving machinery, that saw mills were not generally introduced into that country, until about the commencement of the present century. And even now, in many of the lumber yards in England, their deals from American and Northern lumber are sawed by hand.—*Farmer's Monthly Visitor N. H.*

## PERSEVERANCE AND GENIUS.

Perseverance is the distinguishing characteristic of great men. Do you ask for instances? The page of history abounds with them. Read the life of Demosthenes, and ask yourself what it was that made the poor, stuttering son of a cutter, become the most famous orator of ancient times. Read the life of Virgil, and then say

what it was that made him—the son of a baker—the most celebrated of Latin poets. Read the life of Æsop, and consider how it was that he, who was the son of a slave, and also a slave himself, managed to acquire so imperishable a fame. Read the life of Thomas Wolsey—son of a butcher—Cardinal of the church of Rome, and, next to the King, in his day the most powerful person in the English dominions. Read the life of William Shakspeare, also the son of a butcher, and one of the most famous poets the world has ever beheld. Read the life of Oliver Cromwell, a man who rose from a comparatively humble station to be the Protector of the English Commonwealth, and who was assuredly the greatest man that ever ruled the destinies of this empire. Read the life of Benjamin Franklin, who, in his early days, was a journeyman printer, but afterwards one of the most celebrated of American philosophers and statesmen. Read the life of William Gifford, the editor of the *Quarterly Review* in after times, but in his youth an humble shoemaker's apprentice, and for want of paper was obliged to work his algebraic problems on leather with an awl. Read the life of Robert Burns, a ploughman of Ayrshire, in Scotland, but perhaps the greatest of Scotch poets. Read the lives of Allan Ramsay and James Hogg, both of whom were sons of agricultural laborers, but who, as poets, were bright ornaments of the land of Robert Burns. Read the life of James Cook, who for a long time was nothing but a common sailor, but who afterwards, on voyages of discovery, sailed three times round the world. Read the life of Jeremy Taylor, who was a barber's boy, and afterwards a D.D. Read the life of Thomas Telford, the great civil engineer, who was once a shepherd's boy. Read the life of Inigo Jones, who was first a journeyman carpenter, and then the chief architect of his age. Read the life of Halley the astronomer, and son of a poor soapboiler. Read the life of Huay the chemist, the son of a poor weaver. Read the lives of Smeaton and Rennie, both eminent engineers, and both of them at one time merely makers of mathematical instruments. And when you have read all these, ask yourself whether perseverance had not as much to do in making those great men as any other quality which they possessed.—*Working Man's Friend.*

## WINTER THE TIME TO THINK.

Winter is the time for farmers to *think*—spring, summer, and fall, to work; and the three latter season's labour will be to little profit, if the time of the first shall have been misspent. All the plans of the next season's operations should be laid and well considered during winter. All improvements, all designs for new operations; all the work to be done, should then be considered and prepared for; so that, when the time for work arrives, he will have nothing to do but to “go ahead.” Then he has no time to think; but if he has been wise during winter, he will have no need of it. It is a pitiful sight to look at in the spring, when all nature is in an ecstasy of delight, to see a farmer flying about “like a hen with her head cut off,” trying to do a thousand things at

once, not knowing which to do first, running here and running there in search of his rusty implements, some of which require repairs, some can't be found, the plowing season passing away, the planting season rapidly advancing, and he not prepared for anything.

#### HONEST LABOR.

Labor, honest labor, is mighty and beautiful. Activity is the ruling element of life, and its highest relish. Luxuries and conquests are the result of labor, we can imagine nothing without it. The noblest man of earth is he who puts his hands cheerfully and proudly to honest labor. Labor is a business and ordinance of God. Suspend labor and where is the glory and pomp of earth—the fruit fields and palaces and fashionings of matter for which men strive and war! Let the labor scoffer look around him, look at himself, and learn what are the trophies of toil. From the crown of his head to the sole of his foot, unless he is a Carib, made as the beast, he is the debtor and slave of toil. The labor which he scorns has tracked him into the stature and appearance of man. Where gets he his garmenting and equipage? Let labor answer. Labor which makes music in the mine, and the furrow, and at the forge. O, scorn labor, do you—man who never yet earned a morsel of bread. Labor pities you, proud fool, and laughs you to scorn. You shall pass to dust forgotten, and labor will live on forever glorious in its conquest and monuments.

#### GEOLOGICAL CHANGES.

An English periodical states that Sir Charles Lyell is engaged on a new edition of his Principles, which, among other matters, is to contain the sum of all we know concerning great geological changes. In connection with this subject an interesting point is raised by Alfred Taylor, who contends that the sea level, which is usually taken as the datum in geological and other scientific calculations, is by no means to be considered as permanent. He shows that the solid matters discharged into the sea by rivers would form a deposit three inches in thickness over the bottom in the course of 10,000 years, and consequently raise the level of the water by that amount. The Ganges drains 400,000 square miles, and in 1,751 years would reduce the level of that vast region by one foot. The Mississippi, which drains 1,100,000 miles, carries one foot from the surface of the soil into the sea in 9,000 years. Thus the level of the land will be lowered, while that of the sea is raised; the latter cannot, therefore, be regarded as fixed and permanent in geological calculations.

It is as cheap to raise one ton of hay or clover, as a ton of buckwheat or pig-weeds.

A cow bought for ten dollars, whose milk just pays her keeping, affords less profit than one at thirty dollars, giving double the value of milk.

It costs no more to raise a hundred bushels of Baldwins than a hundred bushels of cider apples; or ten barrels of Virgalieus or Bartlett's than the same quantity of choke pears.

#### HYBERNATION OF INSECTS.

Towards the close of autumn the whole insect world, particularly the tribes of beetles, is in motion. A general migration takes place; the various species quit their usual haunts and betake themselves in search of secure hybernacula.\* Different species, however, do not select precisely the same time for making this change of abode. Thus many lady bugs, field bugs and flies, are found out of their winter quarters even after the commencement of frost; while others make good their retreat long before any severe cold has been felt. The days which they select for retiring to their hybernacula are some of the warmest days of autumn, when they may be seen in great numbers, alighting on the walls, rails, pathways, &c., and running into crevices and cracks, evidently in search of some object very different from those which ordinarily guide their movements.

The site chosen by different perfect insects for their hybernacular is very various. Some are content with insinuating themselves under any large stone, a collection of dead leaves or the moss of the sheltered side of an old wall or bank. Others prefer for a retreat the birchen or ivy-covered interstices of the bark of old trees—the decayed bark itself, especially that near the roots—or bury themselves deep in the rotten trunk; and a very great number penetrate into the earth to the depth of several inches. The aquatic tribes burrow into the mud of their pools. In every instance the selected dormitory is admirably adapted to the constitution, mode of life, and wants of the occupant.

#### \* Winter quarters.

#### WONDERFUL OX.

THE FINEST OX IN THE WORLD.—An ox, acknowledged by all who have seen him to be the most extraordinary one they have ever heard of, is about to be forwarded to the Smithfield Cattle Show, from Sir H. Verney's of Claydon House. He was bred and fed by the hon. baronet, and is a pure shorthorn. He is rather over five years old, and is supposed to be much heavier than the famous Durham ox, about which so much noise was made at the beginning of the present century, or than the American ox, which some few years since attracted so much notice. He stands nearly 18 hands high, and measures 6ft. 6in. from hip to shoulder, 3ft. across the hips, 9ft. 11in. in girth behind the shoulder, and 12ft. in length from the tip of the nose to the rump, while his depth from chin to brisket exceeds 4ft. 6in. He is exceedingly well made up, particularly along the whole length of his back; and, notwithstanding his great size, presents none of those monstrous fatty excrescences which so generally disfigured the highly-fed beasts, and were so generally condemned a few years since. He has been fed upon grass, cake, and corn; and is supposed by various judges, who have courteously been permitted by Mr. Fraser, Sir H. Verney's steward, to visit him, to weigh upwards of 300 stone. Notwithstanding his great weight, he is exceedingly active, is very tractable, and is a capital feeder; indeed, Mr. Fraser does not hesitate to express his belief that the animal could stand feeding for another year. In color he is a light roan, with white predominating, and is altogether a very handsome quiet beast, with a kind head and docile eye.—*Bucks Chronicle*.



## POETRY.

## 'TIS NOT FINE FEATHERS THAT MAKE FINE BIRDS.

A peacock came, with his plumage gay,  
Strutting in regal pride one day,  
Where a small bird hung in a gilded cage,  
Whose song might a seraph's ear engage;  
The bird sung on while the peacock stood,  
Vaunting his plumes in the neighborhood;  
And the radiant sun seemed not more bright;  
Than the birds that basked in his golden light;  
But the small bird sung in his own sweet words  
" 'Tis not fine feathers that make fine birds!"

The peacock strutted; a bird so fair  
Never before had ventured there,  
While the small bird sung at the cottage door,  
And what could a people wish for more;  
Alas! the bird of the rainbow wing,  
He wasn't contented for he tried to sing,  
And they who gazed on his beauty bright,  
Scared by his screaming took to flight;  
While the small bird sung in his own sweet words,  
" 'Tis not fine feathers that make fine birds!"

Then prithee take warning, maiden fair,  
And still of the peacock's fate beware;  
Beauty and wealth won't win your way,  
Though they're attired in plumage gay,  
Something to charm you all must know,  
Apart from fine feathers and outward show;  
A talent, a grace, a gift of mind  
Or else poor beauty is left behind!  
While the small birds sing in their own sweet words,  
" 'Tis not fine feathers that make fine birds!"

**SOCIETY.**—In the beginning of the world, the common Creator of all vouchsafed to the brute herd only the principle of vitality; to us he gave souls also, that an instinct of affection, reciprocally shared, might urge us to seek for, and to give, assistance; to unite in one people, those before widely scattered; to emerge from the ancient wood, and abandon the forests where our fathers dwelt; to build houses, to join another's dwelling to our own homes; that the confidence mutually engendered by a neighbour's threshold might add security to our slumbers; to cover with our arms a fellow citizen when fallen or staggering from a ghastly wound; to sound the battle signal from a common clarion; to be defended by the same ramparts, and closed in by the key of a common portal.

**THINGS WONDERFUL AND TRUE**—With a very near approach to truth, the human family inhabiting the earth is estimated at 790,000,000, the annual loss by death 18,000,000. Now, the weight of animal matter of this immense body cast into the grave is no less than 635,000 tons, and by its decomposition produces 9,000,000,000,000 cubic feet of gaseous matter. The vegetable productions of the earth clear away from the atmosphere the gases thus generated, decomposing and assimilating them for their own increase. This cycle of change has been going on ever since man became an occupier of the earth. He feeds on the lower animals and the seed of plants, which, in due time, become a part of himself. The lower animals feed upon the herbs and grasses, which, in their turn, become the animal; then, by its death, again passes into the atmosphere, and is ready once more to be assimilated by plants. The earth or bony substance alone remaining sufficiently deep in soil to be out of the absorbent reach of the roots of plants and herbs. It is not at all difficult to prove that the elements of which the living bodies of the present generation are composed, have passed through millions of mutations, and formed parts of all kinds of animals and vegetable bodies, and consequently it may be said that fractions of the elements of our ancestors form portions of ourselves.—*Working Man's Friend.*

Will you have the gold, or the man? Why, have the man. What boots the gold?

## TO CORRESPONDENTS.

A. H. F., Woodstock.—Communication received too late for insertion this number; will appear in our next.

## TORONTO RETAIL MARKETS.

January 2, 1854.

Flour—Millers' extra superfine. per barrel....	0	0	a	32	6
do Superfine do .....	0	0	a	31	3
Farmers', per 196 lbs. ....	27	6	a	6	3
Wheat—Fall. per bushel, 60 lbs. ....	6	0	a	0	0
Spring. per bushel, 60 lbs. ....	0	0	a	0	0
Oatmeal. per barrel. ....	0	0	a	35	0
Rye. per bushel. 56 lbs. ....	4	0	a	4	3
Barley. per bushel, 48 lbs. ....	2	9	a	3	6
Oats. per bushel 34 lbs. ....	2	6	a	3	0
Peas. per bushel. ....	2	6	a	4	0
Potatoes. per bushel. ....	2	9	a	3	4
Apples. per bushel. ....	1	6	a	2	6
Grass Seed. per bushel, 48 lbs. ....	7	5	a	0	0
Clover Seed. per bushel. ....	27	6	a	28	6
Hay. per ton. ....	60	0	a	75	0
Straw. per ton. ....	50	0	a	60	0
Onions. per bushel. ....	5	0	a	7	6
Butter—Lab. per lb. ....	0	8	a	0	9
Fresh. per lb. ....	0	10	a	1	0
Lard. per lb. ....	0	6	a	0	7½
Turkeys. each. ....	2	6	a	3	6
Geese. each. ....	2	9	a	3	3
Ducks. per couple. ....	1	6	a	1	9
Fowls. per pair. ....	1	0	a	1	6
Cheese. per lb. ....	0	5	a	0	6
Pork. per 100 lbs. ....	22	6	a	25	0
Fresh. per lb. ....	0	0	a	0	5
Beef. per 100 lbs. ....	22	6	a	27	6
Beef. per lb. ....	0	3	a	0	9
Hams. per 100 lbs. ....	45	0	a	50	0
Bacon. per 100 lbs. ....	35	0	a	40	0
Wool. per lb. ....	1	2	a	1	7
Sheepskins. fresh slaughtered. ....	5	0	a	5	8
Calfskins. fresh. per lb. ....	0	0	a	0	6
Hides. per 100 lbs. ....	22	6	a	25	0
Eggs. per dozen. ....	1	0	a	1	3
Veal. per lb. by the quarter. ....	0	3	a	0	4½
Mutton per lb. by the quarter. ....	0	3	a	0	5
Coal. per ton. ....	37	6	a	40	0
Firewood. per Cord. ....	20	0	a	22	6

The quotations for flour are retail prices. The outside quotations for beef, are for choice Christmas pieces.

## The Canadian Agriculturist,

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# THE CANADIAN AGRICULTURIST,

AND JOURNAL OF TRANSACTIONS

OF THE

BOARD OF AGRICULTURE, AGRICULTURAL ASSOCIATION, &c.

VOL. VI.

TORONTO, FEBRUARY, 1854.

No. 2.

## Reports, Discussions, &c.

### EAST ZORRA FARMER'S CLUB.

A meeting of the East Zorra Farmer's Club was held at Donaldson's Hotel, 12th line, on Thursday the 5th of January, when the subject of Cultivation of Crops was introduced.

Present: Messrs. Bishop, Cooke, Thwaites, G. Smith, Robinson, Barnes, Shadwicke, Milman, Dale, Turner (Chairman), and many others.

Mr. DALE read as follows:—

In giving my friends a few hints, I propose to remark as follows: I think our attention ought to be to try and raise as much wheat as possible to the acre. First, I prefer the ground intended for summer fallow to be ploughed in the fall, and if not ploughed in the fall, it ought to be ploughed as early in the Spring as possible before seeding commences, and as soon as seeding is over, and the ground perfectly dry, cross plough it, and then drag and cultivate it well, and try to keep it the right colour, that is not to let it grow green with weeds, and before you start to plough for seed search out all the dung from your fold-yards and buildings, and circulate it all over the ground. Then plough it up for seed, for if the ground be a low wet loamy sort of soil it ought to be ploughed in ridges from 9 to 12 feet each, and then watch your season; I think the best time is from the 5th to the 12th of September, and as soon as sown take your plough and one horse, and plough every furrow, and then take your spade and search all the low parts where you think any water might stand, and dig two inches below the furrow, so as to allow all the water to run off. Then look to the fences round that field and see that they are all right. Second, let the field intended for oats after pasture, clover or stubble, be ploughed with care nine inches broad and five inches deep, much depends on this work being well executed, for a bad ploughman causes serious loss to his employer. Keep your furrows

all open, and lay your land as dry as possible, and as soon as the ground is sufficiently dry to bear the horses, sow your seed and be sure to drag it well in and then roll it, you will find it greatly benefitted by that, for it keeps the moisture in the ground a great deal better, and makes it smother for reaping; water furrow also, and look to the low places, and use the spade freely; and then look round that field and see if there are not a few rails wanted. Thirdly, for Barley. It ought to be sown on ground where turnips and potatoes were raised the previous year, and ploughed in the spring, and the same preparations as before mentioned for oats. For Peas I prefer them to be sown on ground where wheat was raised the previous year, and the ground ought to be ploughed in the fall and spring too, and sown as soon as the ground is sufficiently dry for the drag to work freely, and roll them the same as the rest. There is one thing I would advise you all to do, that is to prepare two or three acres of ground for tares, and let the ground for these be well manured and near your homestead, and you will find them very profitable to mow for your horses and pigs, for I think it is abominable waste to turn draught horses to feed in a pasture, one acre of red clover and two acres of tares mown and consumed in your stables and yards, will keep more horses for five months than twelve acres of your best pasture. You will also have a benefit in the increase of your farm-yard manure, which will much more than pay for the trouble of mowing and draining. The best time for sowing these is as early in the spring as possible; two bushels to the acre, and increase the quantity of seed as the season advances. For clover; there are several methods of sowing this, but the surest is to sow it and harrow it in at the time you sow your grain; I mean, to give it a light harrowing once over, and I think it always grows the best with wheat or barley, for oats are apt to get too stout and smother them out altogether.

For potatoes, the ground ought to be ploughed three or four times over, and well dragged each time so as to get it as mellow as possible. There are several methods of planting those, but I pre-



fer their being planted in rows: let the rows be 36 inches apart, and the sets 12 inches distant, two inches below the surface is sufficient. Lay the manure over the sets, and cover it completely over by deep ploughing when you are ploughing up the rows; this will afford perfect drainage for the potatoes. It is a mistake to suppose that you can raise a larger quantity of potatoes by close planting, they require much space and constant working of the ground while growing.

For Swede turnips. The period of sowing these must be regulated by the weather, though about the forepart of June may be considered the most favourable time. The best cultivators differ in opinion as to the mode in which manure is the most advantageously applied to the Turnip crop; some preferring its being spread over the whole surface of the land and others placing it exactly under the plant. For my own part, I give the preference to placing it exactly under the plant in rows at a distance of twenty inches, so as to allow the horse-hoe to work freely until the middle of August. One pound of seed ought to be sown to the acre, as the cost is trifling and you single out the plants at a regular distance. It will not do to hoe a great field for a little crop, any more than to mow twenty acres of grass for five loads of hay. Enrich the land, and it will pay you for it, you had better farm 50 acres well than 100 acres by halves. To keep your land as dry as possible is the object of every lowland farmer; and, indeed, of so much importance do I consider this, that I hold the man who neglects it unworthy of the name of a farmer. Remember the adage that it is cheaper to do anything well than to have it to do twice; this is not more true in any case than in fencing. I believe that the man who keeps a farm in the neatest order, is at less cost than he who allows his stock to ramble and goes to stop up the fence. This is as bad as to allow water to stand upon the land, and then begin to grip it; or to allow weeds to seed and then to mow them. By the way of farming I have explained for grain, turnips, and potatoes, I can assure you I have raised some splendid crops, and have seen them raised, both in Canada and in Yorkshire in England.

The CHAIRMAN having then begged all to allow each speaker to proceed without interruption, however eager any person might be called on:

Mr. COOKE, who said that having been born in the land of stumps, and used to see crooked furrows, he might say he had been bred to it all his life; he considered it was more profitable to work and manure land well, than to do it in a slovenly way. He differed from Mr. Dale about manuring a summer fallow, but he liked to plough some dung in for a coming crop, as he thought fallowing ought to be enough for that crop; he thought ridging land up good even on flat land. When he lived in the Niagara District, an Englishman came into it, Jones by name, who ridged up his land, first into two yards then afterwards into four good furrows, and he reaped splendid crops, and did a great deal of good in that section of the country. He himself did the same, and found it better both for sowing

and dragging, and it gave better crops. The best piece of wheat he ever had was by hauling ashes off a new piece of land on to a half-worked oat field, about 30 bushels to the acre.

Mr. BARNES wished to know on what course of cropping Mr. Dale farmed, and what quantity of fallow he made. The Rev. Mr. Panquier's system which the Secretary had alluded to as raising such excellent crops, was that of regular manuring. Summer following half the land at a time was no way at all; he [Mr. B.] would fallow 10 acres out of 50 each year, for a five course shift, and manure each fallow. We could not grow green crops like we could in England for we could not feed off the land, so that we take from the land instead of enriching it. Some advocated peas as a fallow crop, but he could not see how we could do without a fallow. When we begin with a farm, we should take hold of the worst piece we have and bring that into order, and so continue with the rest. We ought to sow on dry ridges about 30 feet wide, and strike up furrows so that the land could dry quickly. We ought to plough in the fall as well as in spring, so as to give roots room to run. The more land is worked the better it is, and it is not weakened but strengthened by ploughing, and the more a farmer follows a regular rotation of crops, the more profit he will have.

Mr. HUGGINS said, though he was a stranger here, he had been a farmer in Canada 22 years; he agreed with Mr. Dale in some things, and disagreed in others. In raising wheat he (Mr. Dale) prefers fall ploughing, this year he had happened himself to plough 30 acres, but did not approve of the practice, he thought wheat did best on spring ploughed land. He thought every farmer ought to sow wheat on sod land, for he had raised from 30 to 45 bushels on sod, but never more than 30 on stubble land. He thought we ought to put our dung on green crops, plough land up in ridges about 12 feet wide, and keep dry; we ought not to sow our turnips before the 20th of June, for fear of the fly, if sown before that time, the fly is very apt to destroy them, as he knew by experience, but if after that time, the fly seemed to be gone, and they escaped. As to the rest of Mr. Dale's remarks he agreed with them.

Mr. MILMAN thought with Mr. Huggins that manure ought to be kept for green crops, and then the ground would be good for other crops afterwards, and green crops were as profitable as grain. Some people said, you could not destroy Indian sod without summer fallow, but his farm when he got it was full of Indian grass, and by growing turnips he had got it completely under.

The CHAIRMAN said he thought sod would not want manuring, but he would be afraid of wire-worm. A neighbor had a field that was already so injured by it he thought it would not be worth harvesting.

Mr. BARNES knew a case of wheat failing on old sod, so that the crop was entirely lost; but it was on old Indian grass sod, not on clover.

A discussion then arose about the use of subsoil ploughs, in which their advantages and disadvantages were pointed out. The subject of draining was also introduced.

Mr. BISHOP had raised last year 32 tons of mangel wurzel on a field of rather more than three quarters of an acre, a strong clayey loam. He was in the habit of ploughing three times for green crops, opened his drills, placed the dung in them, covered it up with the plough, and placed his seed on the top. He disagreed with Mr. Barnes as to their taking anything out of the land, for the tops left on, and the weeds killed out, amply repaid any loss. He made this year, off 4 acres of very fox-taily land 2800 bushels of turnips, all by good hoeing; for one field of about 4 rods he had left unhoed, bore at the rate of only 20 bushels to the acre. It was a low field with a hollow centre, where the last tenant had failed to raise about 5 bushels of wheat to the acre the year before; he had made a drain, which took off the water,—ploughed as soon as it was dry three times, dragged and rolled well for seed, sowed on the 21st of June 2 lbs. of seed on 4 acres, and hoed them three times. He had made his drilling machine out of a couple of 1 lb. powder canisters, tied each in the cleft of a forked stick, with a hole in the bottom, and sowed two drills at a time as fast as he could walk, he then rolled the seed in. He thought men ought to raise more clover and hay instead of wheat. He had raised a good deal of clover-seed, turnips, &c., and mangel wurzel, he thought, was a surer crop than turnips, for the fly never touched them; he had rolled turnips after the fly was upon them with decided benefit. He put spring wheat on his turnip land, and sowed to clover, fed his clover till June, and then let it go to seed, and it came better from pasture than from mown clover. Slaughter-house manure grew better crops than anything else.

Mr. DONALDSON had a crop of turnips and mangel wurzel this year, each worked and treated alike, but the mangel wurzel turns out an excellent crop, and the turnips a bad one.

Mr. BISHOP, in answer to a question, said he piled his turnips all together. He had one heap now of 1600 bushels, about 10 feet high, but kept a square flue of boards, pierced with holes in the centre, for a ventilator, so as to keep them sweet. He had a screen about 10 feet long, which he rolled his turnips down into the pit, so as to clean them.

Mr. MILMAN made long heaps of roots, about a yard wide, and covered an inch-and-a-half with dirt, which was quite sufficient. He had a root-house with a chimney to it, which kept 1200 bushels well.

Mr. GRAFTON SMITH said he had lived chiefly on new ground, and thought that after the first crop of wheat men ought to lay down new land to grass. Breaking up sod amongst stumps was difficult, but the best way was to break it up in the fall, sow peas, and after that summer fallow. He thought he had to fallow stubble land, because green crops required so many hands. He broke up some very bad land one fall,—in the spring the cattle ran on it, he cross ploughed it in June, and it broke up very well. He disapproved of breaking up in spring for fallow, for we could not get at it soon enough, for the peas had to be got in first, and then comes haying, then harvest, the grass keeps on growing all the time, and after a

bad harrowing we have to plough for wheat with all the grass alive. He thought manuring on fallow was of no use on his own new land, he had tried it, but saw no difference in the crops. He had seen clover seeded down on wheat, which would grow from 1½ to 2 tons of hay, after two crops it was manured and sown with peas, then cross ploughed and ridged up, and it would do as well as a fallow.

Mr. ROBINSON had experienced great pleasure in hearing so many excellent remarks on the subject. He had determined to consider the matter, but had been unable to gain time to do so. It was a very important subject. In Mr. Dale's paper was a recommendation of summer fallowing; but he objected to it, as leading to the old system, and thought other things paid better now than fallows. Twenty years ago pork and wheat were the only cash articles; now a man who has other animals can sell them for cash; so one ought to look after everything. He who fallows his farm risks all upon one stroke. He knew of a man last year, in the Queen's Bush, who fallowed almost all his farm, and now had 1000 bushels of wheat in his shanty; but it should be considered the risk he ran. He recollected his father fallowing for wheat, which was partially winter killed, and after that grew exceedingly rank, and rusted, so that the straw was at harvest tied up, not in sheaves, but in large bundles, 48 of which went to one bushel of bad wheat. Considering the money that was laid out in fallowing, in horses, wages, &c., he thought those who wished to raise good crops would act differently. Farms should be seeded down, and well done, not with one or two pounds to the acre, but with four or five, so as to choke the Indian grass, and raise good clover for cattle and hogs, in order to have young animals for the butcher, besides a cow or so for home use, and one's hogs grown cheaply. He had a quantity of young hogs last year half fat on clover and water. A man should have a small part of his farm in wheat, part in oats, a large part in clover, so as to get good grass, hay and pork; with good peas, enough to grow \$100 of pork, and then have a yoke of oxen for sale, young cattle, too, and perhaps a pair of young horses. Ought we to do nothing but plough, and get a crop of wheat to sell—pigs, to sell the most of—oats and peas, to sell altogether,—in such case manure was nothing but digested straw. He had heard of cut straw and bran, but he thought we ought to bruise our oats with straw to make good manure. Ploughing was not the only thing necessary, crops require ammonia, potash, and soda,—and thus require ashes. When soil was poor like that field of Mr. Bishop's,—where did the crops get their nourishment from? On board ship lettuces had been raised on wet rags, and he had heard that from 90 to 95 parts of all crops came from the air. How can manure be made if all the crops are sold off, and it be nothing but digested straw? He had lived in the woods all his life,—he came from Yorkshire when 5 years old,—his nearest neighbor was 3 miles off, next one 5, next 7, and he had been at school but two months after he came out here. The condensing and absorbing power in the earth had been placed



there for wise purposes. Charcoal placed in the way of urine absorbed it, so did plaster. Whoever does this, and keeps his crops on the farm, has more manure in one load of dung than one who neglects it has in six. Cattle ought to be well kept in winter, and men ought to keep stock enough for the farm, and farm enough to keep the stock. When a man depends on straw and browse to keep his cows, the butter is bad in summer, and his animals hardly live, when well kept they keep him well. He who begins following new fields at the second or third crop would find it difficult to work among the stumps. He had seen a neighbor cut bad crops after good fallowing; but peas and oats were better,—and he who ploughs in fall, and manures, and cultivates in his peas in the spring, has a crop instead of his neighbor's fallow; and after cross ploughing in the fall, has his land in good heart. Peas make good clean land, and if fall wheat be not convenient after this, spring crops come in well. A Yorkshireman had told him he had broken up an old pasture (eaten quite bare) in June, whilst waiting for hay, harrowed it well, after that, on the 20th of September, ploughed for wheat, and got an excellent crop, though the field looked very rough indeed. He would question if a dry furrow in old pasture, well harrowed, would not rot before September and give a good wheat crop without much labor.

After a few words from the Chairman, a meeting was called for Thursday, the 9th of February, at Lappin's Hotel,—subject "Fences."

Thanks were then voted to Mr. Turner for his conduct in the chair, and to Mr. Dale for his paper, and the meeting separated.

#### EAST OXFORD FARMER'S ASSOCIATION ON DRAINING.

At a Meeting of this Association recently held at the Town Hall, there was a very interesting and important discussion upon the subject of draining, of which the following is a brief report. It was opened with a practical address from Mr. Alexander, from which we are only enabled to give a very short extract:—

"He observed that the subject which had been appointed for discussion upon this occasion, must soon become one of the most important questions with the Farmers of this Province. Both science and practical experience agree in pronouncing a proper system of draining to be the greatest Agricultural improvement in modern times. It may no doubt be alleged that to carry out any system of draining in a thorough and permanent manner requires considerable outlay, and that in a new country where the price of labor is high, the introduction of all such improvements must be gradual. However our prospects are becoming better every day, and if the present remunerative prices continue, it will pay the farmer to adopt many of those artifices by which the natural productiveness of the land will be increased. The beneficial effects of draining are be-

coming well understood. The removal of all superfluous moisture from the surface and subsoil induces a more healthy growth of the plant.—Where water lodges in the soil, the crops receive little benefit from the genial warmth of the sun, which is expended in the natural process of evaporation, while too great an excess of vegetable matter is generated for the growth of our valuable grains. The farmer uses the very appropriate terms *cold* and *sour* when speaking of such lands, upon which there is a vast amount of labor and seed thrown away every year without any return. Where is the remedy? By draining the soil, it is rendered porous for the free admission of atmospheric air, one immediate result of which, will be the rapid decomposition of those vegetable acids which may have been accumulating for ages, thereby producing according to the testimony of our best authorities, an abundant supply of carbonic acid, the principal organic element from which plants derive their nourishment. From the increased porosity consequent upon draining and thorough cultivation, the natural warmth penetrates to a greater depth and the soil must then benefit to the fullest extent from the fertilizing properties of the atmosphere and rains. Mr. Hind illustrates with great clearness their wonderful agency. How their silent but never ceasing work is to build up the organic structure both of the soil and plants, while they also serve to decompose and bring into action the mineral or inorganic elements. It will be observed that what we call fertility is a properly balanced supply of those in the soil, and it is important that the farmer should study the laws which regulate the structure of vegetable life that he may expend his labour to the best advantage.

A very important question arises. What lands are most benefited by draining? The attention of the farmer will naturally be first directed to all those parts which suffer from too much moisture, and seldom bring any crop to maturity. Professor Johnson remarks of clay soils, that when wet they are too close and adhesive, and exclude the air from the roots of the growing plant, but when the water is removed, they crack in every direction, become open, friable and mellow, and are more easily and cheaply worked. But all soils resting upon a hard or clay bottom must be benefited by draining. Many farmers are of opinion that it will benefit even soils of a lighter texture. So far we may coincide with this view that the deeper and more thorough the cultivation, the farther the roots of the plants will descend, and suffer less from the casual droughts; still in a country where labour is so expensive, the draining will doubtless be confined to those lands which more pressingly require it. But it will be necessary that we should at once come to the question of the evening:—Namely, as to the most economical and advantageous system of drainage for this Province.

Mr. Henry Peers (Vice President) remarked that as the construction of either temporary or permanent drains involves considerable outlay, it would be well first to enquire whether the farmer would be sure of a profitable return. Upon this point he was prepared to offer one or two

remarks. He had last summer in one field 13 acres of wheat, which had yielded 40 bushels to the acre, with the exception of 2 acres upon which the wheat was a complete failure from the ground being too wet. To prove the results of draining more clearly he had constructed a short drain through the wettest part of the field and there the wheat was good. Now it must be admitted that according to the present price of wheat, he had sustained a clear loss of £20, and as regarding the cost of draining with the horse-shoe tile (Mr. Peers here exhibited a specimen of the tile he had introduced upon his own farm) putting them 15 feet apart and 3½ feet deep, he had made the calculation that had he drained last year the two unproductive acres, the crop would have more than paid the expense. This may appear to be an extreme case, but is the simple result of recent experience.

Mr. Lemon stated that it was proverbial in the north of Scotland, that the crops were 14 days earlier upon the properly drained fields. He had been principally accustomed to stone drains, and had lately made 175 rods upon his own farm which had proved very satisfactory, but great care was required in their construction. Some built a triangular duct at the bottom, laying one stone flat on the ground, setting up two others as a triangle upon it and then wedging in stone to keep them in their position. But he preferred the sides of the duct perpendicular although it might not be so easy to find suitable stone to cap them. He had heard of some farmers using slabs for that purpose, but this he did not consider a wise economy. All draining should be done with permanent material, and there was no work the farmer had to do, which required more judgment and care, for any obstruction from the displacement of any of the material, used would consume so much labor over again; he would warmly recommend that all draining should be done at first in the most solid and permanent manner.

Mr. Alexander remarked that it would be desirable to take the sense of the meeting regarding the depth at which drains should be constructed, the respective advantages of stone and tile drains, and which kind of tile is to be preferred.

Mr. Paulin thought that no uniform depth could be fixed upon. But the question of economy, is one of great importance in this enquiry. In some subsoils it is hard digging when one gets below 30 or 36 inches, while he was doubtful whether in certain soils and subsoils the top-water would go off, if the drain were placed beyond that depth. It is certainly necessary that the soil should be opened up for the proper descent of the roots. But he thought the above depth sufficient from the common surface, which would admit the free use of the subsoil plough. With respect to the materials used, where there was plenty of surface stone, it might come in advantageously for the main drains, but it is probable that the pipe tile either with the collar or without, [if it could be procured in the Province,] would be the cheapest and most practical material for the smaller drains.

Mr. Peers desired to make one observation in reference to what had fallen in the course of

discussion. All that he had heard could not convince him that two and a half was so advantageous a depth as three and a half feet. He felt no doubt that the surface water would find its way to the latter depth, and would quote a fact arrived at by Mr. Mechi, by experiment on his farm in Essex, upon which the drains were five feet deep. He states that after the application of liquid manure on the surface, he found the smell of it quite perceptible filtering out of the drains below.

The Chairman desiring to have the sense of the meeting respecting the best kind of tile, a lengthened discussion took place, principally sustained by Messrs. Allan, Shell, McCallum and Maybee, when it was agreed that the pipe tile carefully laid was the most satisfactory and the cheapest tile, and the Chairman was requested to communicate with Mr. Buckland, whether a machine for making such tiles could be procured so that they might be introduced into the country.

The next meeting was appointed to be held in the Town Hall, on Friday the 13th January, at 5 o'clock, P.M., when officers will be chosen for the current year.

#### SUBJECT FOR DISCUSSION.

The whole management of sheep. What shelter they require in winter. Their most common diseases. How guarded against? Feeding and treatment of the Ewes before and after lambing. How often the flocks should be changed, &c., &c.

## Communications.

### ON TESTING IMPLEMENTS, DIFFERENT BREEDS OF CATTLE, &c.

To the Editor of the *Canadian Agriculturist*:

SIR,—I hope I shall not be intruding on your time if I ask why there is no trial of the implements offered for exhibition at the Provincial Shows, at least I heard of no trial, and none of the implements seemed to have been used. In England, short and unsatisfactory as the day allowed for it is, there is a trial, and no implement is allowed an award without having gone through it, and why could not the thing be done here? How can there be a really fair competition between two implement makers when the award is made simply by guesswork, or calculation? The plough, for instance, that gets the first prize may draw 8 or 9 stone heavier than one that is not mentioned, and turn a worse furrow, though it may look much the best implement of the two, and a fair trial, with a dynamometer to record the working draught of every implement, would be of immense value to the really skillful mechanic, not to mention that it would knock off some of those acres of gold leaf, and pounds of flaring paint, that distressed the eye of taste so painfully at Hamilton, and make implements



look not as if they were meant for man to use, but for children to look at. I would venture to make another suggestion, and that is, that all the beasts be tied up in order, according to their class, with a number for each to be recognized by. We would then be able to inspect and contrast at our leisure, instead of having to look in several different places for the same class; there would then be very little trouble for the judges also, as everything would be to their hand at once. None but those who have visited one of the great Exhibitions in England, will appreciate the long rows of cattle tied up side by side, according to classes and numbers, the bulls separated from each other by partitions, the cows tied amicably close together. Besides those two or three little close boxes for a few favoured short horn bulls, proclaiming their supposed value and real tenderness, interrupt the eye very much, and one cannot always get a peep into them. I trust that as regards the cattle at least, that improvement will be made in London, viz.: to tie up every beast in its proper class, and according to a number furnished to its owner at the time of entry. I believe the plan would never be changed again. There might be some difficulty with the calves, but they might be tied too just behind their dams, so as to be ready to suck at any moment. I hope the plan of awarding more prizes to the Durhams than any other breed will have had its day, now that the Devons have come out so well. When there were hardly any other cattle in the Province it might have been very well, but I think now that the awarding more classes, and moreover a fourth prize will be found to be an injustice that breeders will not endure. With all due deference to the columns upon columns that have filled your valuable sheets in the last eighteen months, labouring to assert that the Durhams in every situation and for every purpose are unequalled, I would humbly submit my opinion that that position is untenable, at least it has never been proved in England, where the opportunities for doing so are of the first order, and with respect to the opinions of many gentlemen of science, I would say, that what the united skill and energy of the farmers of Great Britain, forming as they do not an uneducated, but one of the most highly educated classes of society, feel themselves unequal to decide upon, is at least equally beyond the ken of Canadian farmers. Shorthorns have been the most fashionable breed, because they have possessed, from the scarcity it would seem of good ones, the run in the market for high prices, forming as it were a fashionable species of gambling, (though I beg leave to say I do not wish to undervalue that most excellent and valuable breed, but only to claim for others a fair allowance of consideration). The scarcity I say, for why is it that a few herds range at prices from £100 to £500, and the common run at the common price of cattle, £15 to £20 for bulls and cows. We all know there are one or two very bad points Durham's possess that it is very difficult to eradicate. The worst point an animal can have, viz.: a lean girth behind the shoulder being one, and I suppose the absence of those faults causes the rise in price. I think it will be

found too that even in that point of view, viz.: price, Devons have equalled the Durhams at last, for more money was given I believe, for them than for the Durhams at Hamilton, at least I know that Mr. Locke refused £100 for one of his cows, and refused to sell me a heifer at all, and refused to take less than £75 & £50 respectively for two bull calves. £100 was given for one bull, and £75 refused for the first prize yearling, and calves selling at £30. Though I do not advocate high prices, for they prevent stock from spreading as it ought, and think £150 quite enough to pay for any beast, still when the money they will fetch is supposed to be a criterion of their value, this proves they do not stand so badly in the public estimation as some would seem to think. Two bulls stood side by side, one a yearling Devon, weight about say 500 lbs., the other an older Durham, weight stated at 2200 lbs., the Devon found an immediate purchaser at £35, the other was offered in vain at £40, a clear proof of the estimate formed of their respective values by the public. It is a great pity some Short Horn breeder did not accept the truly English and high spirited challenge of Mr. Sotham, for now people will say that Durham breeders are always ready to write and talk, but are afraid to come really to actual proof. At the same time I must protest against the abuse of books and public prints shown in the great Hereford and Durham controversy. You must excuse my being a little late in my remarks, but I had been in England last winter, and consequently only read the conclusion of the argument this summer. Mr. Parsons calls the *Mark Lane Express* a "partisan journal," seemingly because it ventures to speak in favor of Herefords. Mr. Sotham blames Mr. Youatt because in writing a description of British cattle, he does not set himself up to be a judge over them. I think both very unfair attacks upon men whose character stands so high, especially that the editor of a British journal is not to be allowed to mention one breed of cattle, because Mr. P. does not favour it. I see Mr. Sotham mentions the fact of cattle and sheep being exported to Cuba, and only the Herefords surviving, I think it but fair to state that Devons have been exported to Jamaica, farther south than Cuba, and found to do well, and impart their good qualities to the native breed in a remarkable degree.

I see also in your valuable paper a drawing of the so called Norwegian Harrows; perhaps your readers may not be aware they are an English invention, despised of course in their own country, taken abroad, and when brought back under a foreign name, creating an immense sensation, following the same course in fact as the reaping machines.

As some of your readers may wish to know the result of putting one breed of cattle against another, for fattening, I enclose you a list of the prizes taken at the Smithfield club from 1844 to 1851, the last year of which the system of showing them all together prevailed, if you should feel inclined to publish it, or any part of it.

I remain,

Yours faithfully,

A HAMILTON FARMER.

SUMMARY  
OF  
PRIZES.

NOTE.—From 1848 to 1851 there was no limitation as to food.

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### PLAN OF IMPORTING CATTLE.

*To the Editor of the Agriculturist.*

DEAR SIR,—I observe in your December number a letter from Mr. Kellar bringing forward a scheme for the importation of stock through a joint stock society. The experience of some years convinces me that nothing would conduce more to our advantage, as farmers both individually and collectively, than the most strenuous endeavours for the improvement of our stock. Experience (hard bought) too, has shown me that on it present footing the importation of valuable stock is a serious undertaking for private individuals, and I have been highly gratified by the way in which Mr. K. has brought forward this matter. In reflecting on his scheme, however, it appears to me that the selecting of £10,000 or even £5000 worth of stock would be a serious charge on two individuals, whilst the care of it on the passage would be heavier still, and this my own experience has shown me, could not be safely entrusted to subordinates. Another difficulty would arise from the fact that every judicious breeder sets before him his own modes, toward which all his efforts should tend in one uniform direction, his selection of crosses and new blood will ever be made in subserviency to this object in view, knowing exactly the deficiencies and excellencies of his own stock. Under these circumstances I submit that his field for selection among ever a large importation is much too limited, the whole world should be open to him. By this system of importation although the animals should be excellent in themselves, too little range would be afforded to relieve the defects of one animal by the excellencies of another, and a set of animals will be produced whose character will be level mediocrity, rather than individual excellence. It by no means follows that even the best bull abstractedly is the best to apply to any herd.

Satisfied of the importance of Mr. Kellar's suggestion, and thankful to him for bringing it forward, I would merely offer as an amendment in carrying it out, that parties should be encouraged to select and import their own stock by a series of premiums on importation. No one should select for a breeder but himself; if his own judgment is not to be his ultimate standard of reference he will never be successful.

I would suggest the following as a rough sketch of a scheme for encouraging the importation of stock.

Let 10 per cent be deducted from the amount granted annually to all agricultural societies by government, as a general importation fund.

Let all parties wishing to claim a premium on any importation, send to the Agricultural Board a full statement of each importation, with the original cost of the animals, previous to the first yearly Provincial Exhibition following such importation.

Let all animals imported be required to be shown at the first Provincial Exhibition following their importation, to entitle them to claim.

Let three judges be appointed at every annual exhibition, for the purpose of judging if such ani-

mals are of quality worthy of importation, and worth their first cost.

If such animals are approved and their first cost also satisfactory, (if the latter is not so provide for fixing a value) let a premium be allotted the importer amounting to 15 per cent on their first cost, in case they do not take the first prize in their class at the exhibition. In case they take the first prize, let the premium be raised to 25 per cent on their cost in addition to the prize taken, saving a proviso that if the animal be a male, he shall be open to the use of members of the County Society in which he is placed at a stipulated price, on that County Society adding one-half to the amount given by the Board.

I would suggest also that the three judges be empowered, in case of loss either by wreck or death on passage, to examine, on oath if necessary, all information offered in reference to such loss, and allot to the parties concerned, should they think fit, an amount not exceeding two-thirds of the amount of premium the importation would have taken had it come to hand. This amount in prospectu would probably be an inducement to parties who had already stretched to the extent of their means to get a superior article; to lay out an additional sum in insurance, which they would otherwise wish if possible to avoid.

Should the 10 per cent not be found to cover the outlay required, I am confident either our Government or Agricultural community, would not be appealed to in vain, in a project so fraught with national advantage. In this matter our American neighbors have already taken the initiative, but I feel assured the plan now followed by them will by the sameness of the importations, conduce only to mediocrity, whereas individual effort would conduce to individual excellence. Canada is not yet, however, behind, and there is no reason why she should look *even to the English herd book* as the standard of perfection. The world is still young and onward, and why should the breeders of the present day confine themselves exactly to that strain of blood created by their grandfathers, who no doubt in their time were very judicious men. It would also be very desirable that the Board should make some arrangement with the Canadian steamers to secure good and cheap accommodation, and to have a responsible officer on board to assist, advise, and even compel proper arrangements as to food, &c., parties in charge of such stock being generally utterly ignorant of the requirements of a sea voyage, and often incapacitated by sickness.

Yours very respectfully,  
RALPH WADE, Jun'r.

Cobourg, 27th Dec., 1853.

### IMPORTED SHORT-HORN BULL "BELLEVILLE."

*To the Editor of the Canadian Agriculturist:*

SIR,—At the sale of imported Short-Horn Cattle belonging to the Northern Kentucky Importing Society, a yearling Bull ("Belleville," the 3rd purchased of a near connexion of mine, Mr. Hopper, for \$1,015, the highest price paid,)

realized, at the sale, a comparatively low price. As the amounts sold appeared in all the Agricultural papers, and as such a statement, without some explanation, is calculated seriously to affect Mr. Hopper's interests as a Short-Horn breeder, I shall feel extremely obliged by the insertion in your valuable Journal of a letter received by Mr. Hopper from Mr. Gerrard, one of the gentlemen sent to England to purchase stock.

I remain, Sir,

Your obedient servant,

C. A. JORDISON.

Port Hope, C. W., Dec. 31, 1853.

(Extract from Mr. Gerrard's Letter.)

"Home, near Paris, Ky., Oct. 21, 1853.

"At the time of sending them the catalogues), I thought that I would write you, as an act of justice, and let you know how 'Belleville' 3rd, came to sell so comparatively low. He met with the misfortune to be crippled in one of his hind legs during a storm at sea, which, together with the long voyage (57 days), reduced him until you would scarcely have known him when he landed, although he had partially recovered before he landed. The long travel by Railroad (some 800 miles), in excessively hot weather in July, caused his leg or hock to swell again, so that when I got him to Kentucky, and on the day of sale, he was quite lame, and looked very badly, which was the reason that he sold for *only near his value*; for you must understand that most of them sold for exorbitant prices by the competition of wealthy and spirited breeders from different counties, who owned large herds of fine cows, and had formed themselves into companies for the purpose of purchasing. The gentleman who purchased 'Belleville' the 3rd is Mr. David Coleman, near Lexington, Kentucky. I hear that he is much pleased with his bargain, that the Bull is improving finely, and will get well, so that his injury, received at sea, is only temporary.

"H. GERRARD.

"To John Mason Hopper, Esq., Newham Grange, Middlesbro'-on-Tees, Yorkshire, England."

## Natural History.

### THE OX—HISTORY, MANAGEMENT, DISEASES, &c.

(Continued from last number.)

[The Devon being one of the principal breeds, and much controversy having taken place among breeders as to the respective merits of the breeds, we have inserted Mr. Youatt's remarks—able and impartial—without abridgement. We advise all cattle owners to *study* them.]

#### THE MIDDLE HORNS.

##### THE DEVONS.

The north of Devon has been long celebrated for a breed of cattle beautiful in the highest de-

gree, and in activity at work and aptitude to fatten unrivalled. The native country of the Devons, and where they are found in a state of the greatest purity, extends from the river Taw westward, skirting along the Bristol Channel; the breed becoming more mixed, and at length comparatively lost before we arrive at the Parrett. Inland it extends by Barnstable, South Molton, and Chumleigh, as far as Tiverton, and thence to Wellington, where again the breed becomes unfrequent, or is mixed before we reach Taunton. More eastward the Somersets and the Welsh mingle with it, or supersede it. To the south there prevails a larger variety, a cross probably of the Devon with the Somerset; and on the west the Cornish cattle are found, or contaminate the breed. The Devonshire man confines them within a narrower district, and will scarcely allow them to be found with purity beyond his native county. From Portlock to Biddeford, and a little to the north and the south, is, in his mind, the peculiar and only residence of the true Devon.

From the earliest records the breed has here remained the same; or if not quite as perfect as at the present moment, yet altered in no essential point until within the last thirty years. This is not a little surprising when it is remembered that a considerable portion of this district is not a breeding country, and that even a proportion, and that not a small one, of Devonshire cattle, are bred out of the county. On the borders of Somerset and Dorset, and partly in both, extending southward from Crewkern, the county assumes the form of an extensive valley, and principally supplies the Exeter market with calves. Those that are dropped in February and March, are kept until May, and then sold to the drovers, who convey them to Exeter. They are there purchased by the Devonshire farmers, who keep them for two or three years, when they are sold to the Somersetshire graziers, who fatten them for the London market; so that a portion of the Devons, and of the very finest of the breed, come from Somerset and Dorset.

The truth is, that the Devonshire farmers were, until the last century, not conscious that they possessed anything superior to other breeds; but, like agriculturists everywhere else, they bought and bred without care or selection. It is only within the last one hundred and fifty or sixty years that any systematic efforts have been made to improve the breeds of cattle of the kingdom; and we must acknowledge, that the Devonshire men, with all their advantages, and with such good ground to work upon, were not the first to stir, and, for a time, were not the most zealous when they were roused to exertion. They are indebted to the nature of their soil and climate for the beautiful specimens which they possess of the native breed of our island, and they have retained this breed almost in spite of themselves. A spirit of emulation was at length kindled, and even the Devons have been materially improved, and brought to such a degree of perfection, that, take them all in all, they would suffer from intermixture with any other breed.

Whatever be the breed, there are certain conformations which are indispensable to the thrive-



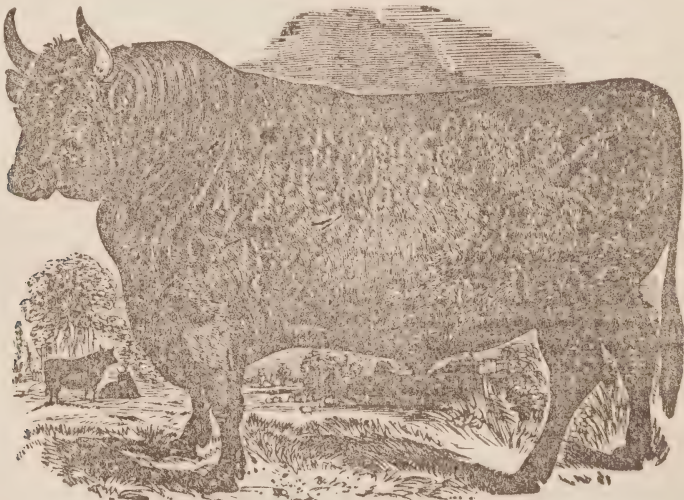
ng and valuable ox or cow. When we have a clear idea of these, we shall be able more easily to form an accurate judgment of the different breeds. If there is one part of the frame, the form of which, more than of any other, renders the animal valuable, it is the chest. There must be room enough for the heart to beat, and the lungs to play, or sufficient blood for the purposes of nutriment and of strength will not be circulated; nor will it thoroughly undergo that vital change which is essential to the proper discharge of every function. We look, therefore, first of all to the wide and deep girth about the heart and lungs. We must have both: the proportion in which the one or the other may preponderate, will depend on the service we require from the animal; we can excuse a slight degree of flatness on the sides, for he will be lighter in the forehand, and more active; but the grazier must have width as well depth. Not only about the heart and lungs, but over the whole of the ribs, must we have both length and roundness; the *hooped* as well as the deep barrel is essential; there must be room for the capacious paunch, room for the materials from which the blood is to be provided. There should be little space between the ribs and the hips. This seems to be indispensable in the ox, as it regards a good healthy constitution, and a propensity to fatten; but a largeness and drooping of the belly is excusable in the cow, or rather, though it diminishes the beauty of the animal, it leaves room for the udder; and if it is also accompanied by swelling milk veins, it generally indicates her value in the dairy.

This roundness and depth of the barrel, is most advantageous in proportion as it is found behind

the point of the elbow; more than between the shoulders and legs; or low down between the legs, rather than upward toward the withers; for it diminishes the heaviness before, and the comparative bulk of the coarser parts of the animal, which is always a very great consideration.

The loins should be wide, for they are the prime parts; they should extend far along the back: and although the belly should not hang down, the flanks should be round and deep. The hips, without being ragged, should be large; round rather than wide, and presenting, when handled, plenty of muscle and fat. The thighs should be full and long, close together when viewed from behind, or have a good twist, and the farther down they continue close the better. The legs short, varying like other parts according to the destination of the animal; but decidedly short, for there is an almost inseparable connection between length of leg and lightness of carcase, and shortness of leg and propensity to fatten. The bones of the legs, and they only, being taken as a sample of the bony structure of the frame, generally, should be small, but not too small—small enough for the well-known accompaniment, a propensity to fatten; but not so small as to indicate delicacy of constitution, and liability to disease.

Last of all, the hide—the most important thing of all—thin, but not so thin as to indicate that the animal can endure no hardship: movable, mellow, but not too loose, and particularly well covered with fine long and soft hair. We shall enter more fully and satisfactorily into this subject in the proper place; but this bird's-eye view may be useful. We return to the Devon cattle.



THE DEVON BULL.

The more perfect specimens of the Devon breed are thus distinguished. The horn of the *bull* ought to be neither too low nor too high, tapering at the points, not too thick at the root, white below, and of a yellow or waxy colour at the tip. The eye should be clear, bright, and prominent, showing much of the white, and have around it a circle of a dark orange color. The forehead

should be flat, indented, and small, for by the smallness of the forehead the purity of the breed is very much estimated. The cheek should be small, and the muzzle fine: the nose must be of a clear yellow. The nostrils should be high and open: the hair curled about the head. The neck should be thick, and that sometimes almost to a fault.

Excepting in the head and neck, the form of the bull does not materially differ from that of the ox, but he is considerably smaller. There are exceptions, however, to this rule.

The head of the ox is small, very singularly so, relatively to his bulk; yet he has a striking breadth of forehead. It is clean and free from flesh about the jaws. The eye is very prominent, and the animal has a pleasing vivacity of countenance, distinguishing it from the heavy aspect of many other breeds. Its neck is long and thin, admirably adapting it for the collar, or the more common and ruder yoke.

It is accounted one of the characters of good cattle, that the line of the neck from the horns to the withers should scarcely deviate from that of the back. In the Devon ox, however, there is a peculiar rising of the forehead, reminding us of the blood-horse, and essentially connected with the free and quick action by which this breed has ever been distinguished. It has little or no dewlap depending from its throat. The horns are longer than those of the bull, smaller, and fine even to the base, and of a lighter colour, and tipped with yellow. The animal is light in the withers; the shoulders a little oblique; the breast deep, and the bosom open and wide, particularly as contrasted with the fineness of the withers. The fore-legs are wide apart, looking like pillars that have to support a great weight. The point of the shoulder is rarely or never seen. There is no projection of bone, but there is a kind of level line running on to the neck.

These are characteristic and important points. Angular bony projections are never found in a beast that carries much flesh and fat. The fineness of the withers, the slanting direction of the shoulder, and the broad and open breast, imply strength, speed, and aptitude to fatten. A narrow chested animal can never be useful either for working or grazing.

With all the lightness of the Devon ox, there is a point about him, disliked in the blood or riding horse, and not approved in the horse of light draught—the legs are far under the chest, or rather the breast projects far and wide before the legs. We see the advantage of this in the beast of slow draught, who rarely breaks into a trot, except when he is goaded on in *catching times*, and the division of whose foot secures him from stumbling. The lightness of the other parts of his form, however, counterbalances heaviness here.

The legs are straight, at least in the best herds. If they are in-kneed, or crooked in the fore-legs, it argues a deficiency in blood, and comparative incapacity for work; and for grazing, too, for they will be hollow behind the withers, a point for which nothing can compensate, because it takes away so much from the place where good flesh and fat should be thickly laid on, and diminishes the capacity of the chest and the power of creating arterial and nutritious blood.

The fore-arm is particularly large and powerful. It swells out suddenly above the knee, but is soon lost in the substance of the shoulder. Below the knee, the bone is small to a very extraordinary degree, indicating a seeming want of strength;

but this impression immediately ceases, for the smallness is only in front—it is only in the bone; the leg is deep, and the sinews are far removed from the bone, promising both strength and speed. It may perhaps be objected that the leg is a little too long. It would be so in an animal destined only to graze; but this is a working animal, and some length of leg is necessary to get him actively over the ground.

There is a very trifling fall behind the withers, but no *hollowness*, and the line of the back is straight from them to the setting on of the tail. If there is any seeming fault in the beast, it is that the sides are little too flat. It will appear, however, that this does not interfere with feeding, while a deep, although somewhat flat chest is best adapted for speed.

The two last ribs are particularly bold and prominent, leaving room for the stomach and other parts concerned in digestion to be fully developed. The hips, or huckles, are high up, and on a level with the back, whether the beast is fat or lean. The hind quarters, or the space from the hip to the point of the rump, are particularly long, and well filled up—a point of importance both for grazing and working. It leaves room for flesh in the most valuable part, and indicates much power behind, equally connected with strength and speed. This is an improvement quite of modern date. The fullness here, and the swelling out of the thigh below, are of much more consequence than the prominence of fat which is so much admired on the rump of many prize cattle.

The setting on of the tail is high; on a level with the back; rarely much elevated or depressed. This is another great point, as connected with the perfection of the hind quarters. The tail itself is long, and small, and taper, with a round bunch of hair at the bottom.

The skin of the Devon, with its curly hair, is exceedingly mellow and elastic. Graziers know that there is not a more important point than this. When the skin can be easily raised from the hips, it shows that there is room to set on fat below.

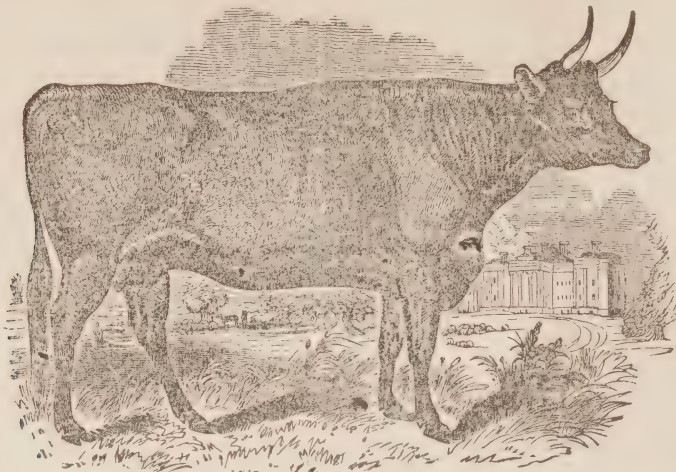
The skin is thin rather than thick. Its appearance of thickness arises from the curly hair with which it is covered, and curly in proportion to the condition and health of the animal. These curls run like little ripples on water. Some of these cattle have the hair smooth, but then it should be fine and soft. Those with curled hair are more hardy, and fatten more kindly. The favorite colour is a blood red. This is supposed to indicate purity of breed; but there are many good cattle approaching almost to a dark bay. If the eye is clear and good, and the skin mellow, the paler colors will bear hard work, and fatten as well as others; but a beast with pale hair, and hard under the hand, and the eye dark and dead, will be a sluggish worker, and an unprofitable feeder. Those of a yellow color are said to be subject to diarrhœa, or scouring.

These are the principal points of a good Devon ox; but he used to be, perhaps is yet, a little too flat-sided, and the rump narrowed too rapidly behind the hip bones; there was too much space between the hip bones and the last rib; and he



was too light for tenacious and strong soils. A selection from the most perfect animals of the true breed—the bone still small and the neck fine, but the brisket deep and wide, and down to the knees, and not an atom of flatness all over

the side—these have improved the strength and bulk of the Devon ox, without impairing, in the slightest degree, his activity, his beauty, or his propensity to fatten.



THE DEVON COW.

There are few things more remarkable about the Devon cattle than the comparative smallness of the cow. The bull is a great deal less than the ox, and the cow smaller than the bull. This is some disadvantage, and the breeders are aware of it; for, although it may not be necessary to have a large bull, and especially as those of any extraordinary size are seldom handsome in all their points, but somewhere or other present coarseness or deformity, it is almost impossible to procure large and serviceable oxen, except from a somewhat *roomy* cow. These cows, however, although small, possess that roundness and projection of the two or three last ribs, which make them actually more *roomy* than a careless examination of them would indicate. The cow is particularly distinguished for her full, round clear eye, the gold-colored circle round the eye, and the same color on the inside skin of the ear. The countenance cheerful, and the muzzle orange or yellow. The jaws free from thickness, and the throat from dewlap. The points of the back and the hind quarters different from those of other breeds, having more of roundness and beauty, and being free from angles.

The qualities of the Devon may be referred to three points:—working, fattening, and milking.

Where the ground is not too heavy, the Devon oxen are unrivalled at the plough. They have a quickness of action which no other breed can equal, and very few horses exceed. They have a docility and goodness of temper, and stoutness and honesty of work, to which many horses cannot pretend. It is a common day's work on fallow land for four Devon steers to plough two acres with a double furrow plough. Four good steers will do as much work in the field, or on the road, as three horses, and in as quick, and often quicker time, although farmers calculate two oxen equal to one horse. The principal objection to Devon oxen is, that they

have not sufficient strength for tenacious, clayey soils: they will, however, exert their strength to the utmost, and stand many a dead pull, which few horses could be induced or forced to attempt. They are uniformly worked in yokes, and not in collars. Four oxen, or six grown steers, are the usual team employed in the plough.

The opponents of ox-husbandry should visit the valleys of north or south Devon, to see what this animal is capable of performing, and how he performs it.

The profit derived from the use of oxen in this district arises from the activity to which they are trained, and which is unknown in any other part of the kingdom. During harvest time, and in catching weather, they are sometimes trotted along with the empty wagons, at the rate of six miles an hour, a degree of speed which no other ox but the Devon has been able to stand. It may appear singular to the traveller, that in some of the districts that are supposed to be the very head-quarters of the Devon cattle, they are seldom used for the plough. The explanation, however, is plain enough. The demand for them among graziers is so great, that the breeders obtain a remunerating price for them at an earlier age than that at which they are generally broken in for the plough.

They are usually taken into work at about two years old, and are worked until they are four, or five, or six; they are then grazed, or kept on hay, and in ten or twelve months, and without any further trouble, are fit for the market. If the grass land is good, no corn, or cake, or turnips, are required for the first winter, but, of course, for a second winter these must be added. The graziers like this breed best at five years old, and they will usually, when taken from the plough, fetch as much money as at six. At eight or nine years, or older, they are rapidly declining in value.

After having been worked lightly on the hills for two years, they are bought at four years old by the tillage-farmer of the vales, and taken into hard work from four to six; and, what deserves consideration, an ox must be thus worked in order for him to attain his fullest size. If he is kept idle until he is five or six, he will invariably be stunted in his growth. At six he reaches his full stature, unless he is naturally disposed to be of more than ordinary size, and then he continues to grow for another half year. The Devon oxen are rarely shod, and very rarely lame.

Their next quality is their disposition to fatten, and very few rival them here. Some very satisfactory experiments have been made on this point. They do not, indeed, attain the great weight of some breeds; but, in a given time, they acquire more flesh, and with less consumption of food, and their flesh is beautiful in its kind. It is mottled, or marbled, so pleasing to the eye and to the taste.

For the dairy, the Devons must be acknowledged to be inferior to several other breeds. The milk is good, and yields more than an average proportion of cream and butter; but generally it is deficient in quantity. There are those, however, and no mean judges, who deny this, and select the Devons even for the dairy.

Such is not, however, the common opinion. They are kept principally for their other good qualities, in order to preserve the breed; and because, as nurses, they are indeed excellent, and the calves thrive from their small quantity of milk more rapidly than could possibly be expected.

The aboriginal breed of British cattle is a very valuable one, and seems to have arrived at the highest point of perfection. It is heavier than it was thirty years ago, yet fully as active. Its aptitude to fatten is increased, and its property as a milker might be improved, without detriment to its grazing qualities.

Those points in which the Devons were deficient thirty years ago, are now fully supplied, and all that is now wanting, is a judicious selection of the most perfect of the present breed, in order to preserve it in its state of greatest purity. Many of the breeders are as careless as they ever were; but the spirit of emulation is excited in others. Mr. Davy, of North Molton, lately sold a four-year old bull, for which the purchaser had determined to give one hundred guineas had it been asked.

The Devon cattle are now more than usually free from disease. The greater part of the maladies of cattle, and all those of the respiratory system, are owing to injudicious exposure to cold and wet; the height and thickness of the Devonshire fences, as affording a comfortable shelter to the cattle, may have much to do with this exception from disease.

The Devons have been crossed with the Guernsey breed, and the consequence has been, that they have been rendered more valuable for the dairy; but they have been so much injured for the plough, and for the grazier, that the breeders are jealous to preserve the old stock in their native purity.

The treatment of the calf is nearly the same in every district of North Devon. The calves that are dropped at Michaelmas, and some time afterward, are preferred to those that come in February, notwithstanding the additional trouble and expense during the winter. The calf is permitted to suck three times every day for a week. It is then used to the finger, and warm new milk is given it for three weeks longer. For two months afterward it has plenty of warm scalded milk, mixed with a little finely-powdered linseed cake. Its morning and evening meals are then gradually lessened; and, when it is four months old, it is quite weaned.

Of the other districts of Devonshire little need be said. Toward the south, extending from Hartland toward Tiverton, the Devons prevail, and in their greatest state of purity. There are more dairies than in the north, and supplied principally by the Devon cows. Such are the differences of opinion even in the neighboring districts, that the later calves are here uniformly preferred, which are longer suckled, and afterward fed with milk and linseed-meal.

Advancing more to the south, and toward the borders of Cornwall, a different breed presents itself, heavier and coarser. We have arrived now in the neighborhood of Devonport, where larger cattle are required for the service of the navy; but we must go a little more to the south, and enter on the tract of country which extends from Tavistock to Newton Abbott, before we have the South Devons in full perfection. They are a mixture of the Devons with the native breed of the country; and so adapted do they seem to be to the soil, that all attempts to improve them, so far as grazing and fattening go, have utterly failed. They are often 14 cwt. to the four quarters; and steers of 2½ cwt. are got with fair hay and grass to weigh from six to nine cwt. They bear considerable resemblance to the Herefords, and sometimes the color, and the horn, and the white face, are so much alike in both, that it is difficult to distinguish between them, except that they are usually smaller than the Herefords.

There are few parts of the country in which there is such bad management, and utter neglect of the preservation of the breed, as in this and the most eastern part of Devon. It is not properly a grazing district, except in the neighborhood of Tavistock; but young cattle are rather brought forward for after-grass or turnips elsewhere than finished here for the market, and the method in which this is conducted is not to be commended. If a calf look likely to fatten, it is suffered to run with the cow ten or twelve months, and then slaughtered. If others, that had not before shown a disposition to thrive, now start, they are forwarded as quickly as may be, and disposed of; and therefore it is that all those that are retained, and by which the stock is to be kept up, are the very refuse of the farm. Yet the breed is not materially deteriorated. It has found a congenial climate, and it will flourish there in spite of neglect and injury. The grand secret of breeding is to suit the breed to the soil and climate. It is because this has not been studied, that those breeds, which have been invaluable in certain



districts, have proved altogether profitless and unworthy of culture in others. The South Devon, are equally profitable for the grazier, the breeders and the butcher; but their flesh is not so delicate as that of the Devons. They do for the consumption of the navy; they will not suit fastidious appetites.

The farmers in the neighborhood of Dartmoor breed very few cattle. Their calves are usually procured from East Devon, or even from Somerset or Dorset. They are reared at the foot of the moors for the use of the miners. All, however, are not consumed; but the steers are sold to the farmers of the South Hams, who work them as long as they are serviceable; they are then transferred to the graziers from Somersetshire, or East Devon, or Dorset, by whom they are probably driven back to their native county, and prepared for the market of Bristol or London. A very curious peregrination this, which great numbers of the west-country cattle experience.

As we now travel eastward, we begin to lose all distinctness of breed. The vale of Exeter is a dairy district, and, as such, contains all kinds of cattle, according to the fancy of the farmer. There are a few pure Devons, more South Devons, and some Alderneys; but the majority are mongrels of every description: many of them, however, are excellent cows, and such as are found scattered over Cornwell, West Devonshire, Somerset, and part of Dorset.

As we advance along the south and the east, to Teignmouth, Exmouth, Sidmouth, and over the hill to the fruitful vale of Honiton, we do not find oxen so much used in husbandry. The soil is either a cold hard clay, or its flints would speedily destroy the feet of the oxen. The same variety of pure Devons and South Devons, and natives of that particular district, with intermixtures of every breed, prevail, but the South Devons are principally seen. Some of these cows seem to unite the opposite qualities of fattening and milking. A South Devon has been known, soon after calving, to yield more than two pounds of butter a day; and many of the old southern native breed are equal to any short horns in the quantity of their milk, and far superior to them in its quality.

The Devon cattle prevail along that part of the county of Somerset which borders on Devon, until we arrive in the neighborhood of Wincanton and Ilchester, where the pure breed is almost lost sight of. In the north of Somerset, few of the Devons are to be seen; but along the coast, and even extending as far as Bristol and Bath the purest breed of the Devons is preferred. They are valued for their aptitude to fatten, their quickness and honesty at work; and they are said to be better milkers than in their native county. They are of a larger size, for the soil is better, and the pasturage more luxuriant. It is on this account that the oxen bred in some parts, and particularly in the Vale of Taunton, although essentially Devons, are preferred to those from the greater part of Devonshire, and even from the neighborhood of Barnstaple and South Molton. They are better for the grazier and for the dairy; and, if they are not quite so active as their progenitors, they have not lost their docility and free-

ness at work, and they have gained materially in strength.

The farmers in the south and south-west of Somerset are endeavoring to breed that sort of cattle that will answer for the pail, and the plough, and grazing—a very difficult point; for those that are of the *highest proof* (exhibiting those points or conformations of particular parts which usually indicate a propensity to fatten) are generally the worst milkers, both as to quantity and quality. This being, however, a dairy county, as well as a grazing one, or more so, the principal point with them is a good show for milk. They are, for the most part, of the Devon red, and the best suited for all purposes of any in the West of England. All that is necessary to keep them up in size and proof, and of a good growth, is to change the bull every two years. This is a very important, although an overlooked and unappreciated principle of breeding, even where the stock is most select. No bull should be longer used by the same grazier, or some degree of deterioration will ensue.

It must, nevertheless, be confessed, that in the greater part of the county, and where the Devons are liked best for husbandry and for grazing, experience has taught many farmers to select another breed for the dairy.

While our views regard the general breeding of Devons, as seen in the practice of the mass of breeders in Devonshire, it is yet proper to say that there are some few breeders who have carried their cattle forward to a degree of excellence that would seem incapable of further advancement; and which is now so high that we may perhaps call it perfection. In point of working form they are not deteriorated, and yet they have all the maturity of the short horn, and are equal to any breed in the abundance of meat on the prime parts, and in the high quality of that meat, being marbled and sparkling in the highest degree.

The leading breeders are Mr. James Quartly, of Champson Molland, and his brother, Mr. John Quartly, of Molland; Mr. Richard Merson, of Brinsworthy; and Mr. James Davy, of Flitton Barton, all in Devonshire. Mr. James Quartly has been, more than any other breeder, distinguished as a winner of prizes at the shows of the Royal Agricultural Society of England, and the other gentlemen named have been successful often at these shows, though as the breeders of the animals shown, more than as the exhibitors. Indeed Mr. Merson has himself never shown, and yet has bred several animals that have won in the hands of others.

The Messrs. Quartlys, the inheritors of an ancient stock, succeeded to the herds of their father, the late Mr. Quartly, and their uncle, the present Mr. Francis Quartly, who, from age, has declined further breeding. From their predecessors they have obtained both reputation and excellence in their cattle, and they are maintaining the high character derived from their father and uncle.\*

\* It may be mentioned that animals bred by Messrs. James and John Quartly, won every prize for Devons save one, at the last show of the English Agricultural Society at Exeter, in Devonshire, July 1850, and this was by far the best and most numerous show of Devons ever made.

Mr. Merson, also, succeeded his father as a breeder, and, like his father, ranks at the top of the profession. His cattle are remarkable for an abundance of fine meat on the choice parts, great evenness, very early maturity, and milking quality unsurpassed by any Devons; and indeed their milking capacity, as a herd, is extraordinary, many of his cows equaling the short horns in quantity, while the milk still preserves the known superior richness of the Devon race.

Mr. Davy likewise inherits both the herd and the reputation of his father, a distinguished breeder, and his aim has been, like Mr. Merson's, to have animals not only of great excellence of carcase, but of superior milking capacity.

Mr. George Turner, of Barton, near Exeter, in Devonshire, has in the last few years entered the field of competition with these ancient breeders, and, deriving his cattle from them, is breeding with distinction.

Of late years, Devon bullocks have appeared in the Smithfield Club shows, and, when the numbers exhibited are considered, have been far more successful than any other breed. At a recent show of the Club, there were only thirteen Devons shown, and three won prizes, and that, too, in a competition with one hundred and seven beasts, which were mainly short horns and Herefords. Two of these were exhibited by the Earl of Leicester, and one was good enough to carry off the Gold Medal, as the best ox in the yard. The Earl of Leicester, and his father before him, and their tenant, Mr. Bloomfield, all of Norfolk, are well known breeders of Devons. They have derived much of their late blood from the Messrs. Quartlys, Mr. Merson, and Mr. Davy.

*To be continued.*

#### LECTURE OF PROFESSOR HINCKS, ON THE

RELATIONS OF NATURAL HISTORY TO AGRICULTURE.

The Professor spoke as follows:—

LADIES AND GENTLEMEN,—On this first occasion of addressing you, I have felt disposed to avail myself of the opportunity for illustrating the real and practical importance of the subject which occupies me as a public teacher, and which is only beginning to take its proper place in systems of education, by asking you to view it in connection with what is acknowledged to be among the most important of human occupations, and which is especially associated with the prosperity of this Province. We will therefore now take into consideration the relations of Natural History with Agriculture. Agriculture in the ordinary and convenient application of the term, includes all the pursuits of husbandry, whether strictly in the culture of the soil or in the breeding or management of stock. It is an acknowledged principle respecting all the arts of life that a mere theoretical study of what is proper for effecting a given purpose would be insufficient and would only lead to failure, whilst the skill which is attained by practice under the guidance of experienced teachers, and which depends much on the force of habit, may in all ordinary cases be trusted for its efficiency

though entirely unaccompanied by theoretical knowledge or mental cultivation. Respecting all the arts of life, however, it is equally certain that the possession of theoretical knowledge increases the interest of the artisan in his pursuit, and greatly increases the probability of his attaining superior skill so as to be qualified for directing others, or for effecting improvements, whilst it gives him a higher character and a more important social position, and always naturally connects itself with the general cultivation of his mind and elevation of his character. It may be regarded as an admitted principle needing no defence before an enlightened audience, that the more those who pursue any art are acquainted with the reasons for the processes they are engaged in performing, and are conversant with the sciences connected with the subjects of their labor, the higher, morally, intellectually, and socially will be the average character of the artisans, and the greater will be the amount of improvement in their particular art so far as it admits of improvement. Receiving this principle as established beyond reasonable question, I need only now concern myself with its application to the subject immediately before us. Natural History, in the limited sense in which the title is now generally employed, includes all knowledge respecting the animal and vegetable kingdoms, whether physiological, descriptive, systematical, geographical, or economical. Everything relating to the modes and conditions of life of all organized bodies, the circumstances which influence their development, the climate limits within which they are circumscribed, the changes through which they pass, and the sources of their health and disease, with the influences they severally exert on each other, all come within the wide range of Natural Science. Here then of course we have the scientific exposition of a large part of what the practical agriculturist aims to accomplish. Here we have the theory which explains and justifies his daily practice—or as it may not unfrequently happen—proves the error of that practice, and suggests the remedy for its imperfections and failures. Much of what a farmer does is founded on vegetable physiology. He understands its principles and applies them, which is best, or he follows, perhaps blindly, rules which are founded upon its principles, and are good and useful for reasons which a knowledge of them would enable him to understand; or else—and this is by no means unfrequent—he follows rules or imitates customary practices where they are altogether wrong, and where the light of science would at once exhibit and expose the error. In this case he—or those who taught him—or with whom the practice originated, have had false notions on some points of vegetable physiology, or have hastily and erroneously generalized some principle which was true within proper limits. All plants must grow according to the laws of vegetable life as modified in the case of each particular species. If our rules and proceedings are founded on a knowledge of these laws, whether attained by scientific study or by experience and tradition, we succeed in our undertakings, but so far as we unconsciously vio-



late these laws, and remain the slaves of prejudices which are opposed to them, we can only bring upon ourselves disappointment. The scientific teacher of agriculture occupies a most important position, bringing into their proper relations theory and practice, and harmonising into one body facts and principles drawn from several distinct sciences all bearing on the business of the farmer; but what he undertakes to expound is not so much a separate science, having principles of its own, as a combination of scientific truths belonging to Natural History, Geology, Chemistry, Meteorology, Mechanics, brought together in their proper places and proportions, compared with the results of experience and applied to the direction of practice. This is not a low view of what is to be accomplished by the agricultural profession—it is the highest—and it does justice to the varied and extensive acquirements demanded from him and the great difficulties which he must have overcome in his noble undertaking, to make science useful in one of the most important of human employments where it is greatly needed, and yet there are many obstacles to its efficient application. It is interesting to observe how large a portion of agricultural science consists in applications of animal and vegetable physiology. Why does the farmer weed his field? Because the space and nutriment it affords are all needed to bring to perfection its valuable products, which must be choked or starved, if worthless articles are allowed to intrude. Why, if attentive and judicious, does he exert himself to remove the weeds in due season, and from the paths and waysides as well as from the occupied ground? Because he knows the importance of anticipating the scattering of the seed, having some idea of the rate of increase of ordinary herbs, and as he intends to make his land clean so as to lessen his trouble from year to year, he feels the necessity of looking well to prevent sources of a fresh stock of weeds from escaping notice in dry places where they are passed by the thoughtless as of no consequence. Why does the judicious farmer carefully study the proportion of seed which he employs, to a given extent of land for his various crops, weighing the evidence from reason and experience in favor of the different practices? He desires to obtain from his land the greatest amount of produce which it will yield, and he has to judge between a greater number of plants, each of which has full room for development. The practical point is to decide how many plants of the kind required can come to full perfection on a given space, so that all the available nutriment may be employed under this name set in three different ways. Some of them alter the texture of the soil so as better to adapt it to particular crops, or to make it more manageable for the various processes of culture. Others are chiefly useful by acting upon matters already contained in the soil so as to set free a useful supply of nutriment which would not have been immediately available—whilst others again directly furnish the requisite supplies of food to the crops, and of these some immediately produce all the effect of which they are capable, whilst others

yield their supplies gradually, their effect enduring for a considerable period. The intelligent cultivator applies nothing to the soil without having a good idea what he wants and in what way the desired effect is likely to be produced. He knows that if the soil be clean and open, it rapidly absorbs nutriment from the atmosphere—he knows that his crops all take away some portion of the nutriment contained in the soil; that each different kind makes to a certain degree a different selection, whence the advantage of a succession of crops—and that, although in fresh soils, those peculiarly abounding in the materials by which vegetable life is supported, successive crops may for a time be taken with apparent success, or scarcely perceptible annual deterioration; yet, as each crop actually withdraws a certain amount of important matter from the soil, the idea of inexhaustible fertility is absurd, and it is only when we find the means of cheaply restoring each year what is taken away, that we have a permanently profitable system of cultivation. This is the plain teaching of the success of vegetable physiology—it is conformable with good sense and experience, and it is not without surprise that we read of a neighbouring country remarkable for its extraordinary natural fertility, in which the annual yield of the wheat crops is rapidly diminishing, in consequence it is to be presumed, of entire neglect in restoring anything to the ground. We have here a fresh and fertile region. It is to be hoped we shall act more wisely than to exhaust its powers whilst we daily waste the means of restoring them, thus driving ourselves to the necessity of the constant occupation of fresh land in order simply to maintain our present productive power, which it is our desire and our interest to increase. I might go through in the same way every point of agriculture, horticulture, and arboriculture, showing that every rule is founded on notions supposed to be correct of the structure, mode of life, and nutrition of plants, and that every improvement depends on more correct knowledge in these departments, or a more careful application of what is known. For some of the important facts to be ascertained, we depend on the science of chemistry, the facilities afforded by which are of the utmost value, but in this instance it only brings its resources to the aid of vegetable physiology, which really supplies the whole scientific laws of this grand department of agriculture, and if we turn to that other great department which relates to the keeping of stock of all kinds both for the supply of food and for assistance in labor, it will be found that here also the rational principles which guide the practice of the skilful farmer belong to the science of natural history, and that it is from that study of animal physiology and from diffused knowledge of its established principles that we must chiefly hope for the improvements which are to be expected and derived. The whole theory of feeding and fattening, and of preserving the desirable qualities of individuals in breeding is drawn from animal physiology, and when we review the great improvement made of late years in the management of all kinds of stock, which we know to have directly arisen from theoretical

considerations, it would be unreasonable in us to call in question the practical value of scientific knowledge, as it is manifestly impossible for us to deny the relation of the scientific principles to the practical rules. I have already sufficiently guarded against its being supposed that I deem scientific instruction necessary for practical skill—an extravagant pretension which I altogether disclaim; but in proving the real and intimate connection of natural science with the daily business of every one engaged in agricultural pursuits, I assuredly prove the importance to the country of natural science being studied by many, and being recommended and promoted as a useful pursuit, and especially I prove that it is an appropriate and most desirable study for that large class among us which are immediately concerned in agriculture, and hence, at the same time afford a peculiarly efficient means of exercising the various powers of the mind, and calling forth its best feelings; its neglect as a branch of education would seem to imply a species of infatuation. But what I have said thus far relates to the dependence of the whole science and art of agriculture for its theoretic basis on the more extended science of natural history. I proceed to point out some more immediate special applications of the knowledge of natural history to the business of the farmer. Many of the diseases to which cultivated plants and domestic animals are subject, and which sometimes occasion very extensive mischief, depend on the presence of parasitical plants or animals often exceedingly minute. The first step towards remedying the evil is to understand its real cause, and it must be evident that the more that is known of the structure, nutrition, and reproduction of the parasites, the more successfully can we attempt to limit their ravages. The ergot, must, rust, and mould, on the grain producing plants, are minute and very curious fungi, whilst serious injuries are caused by aphides or plant lice, a tribe of insects of very remarkable characters, which, under the names of black fly, green fly, and American blight, given to different species, are well known by their occurrence on wheat, beans, hops, and apple trees, as well as on roses, and other plants. No one of this tribe, indeed, is altogether injurious; writers have attributed some species to the potato blight, but tho' it is well known that the potato, like many other plants, is occasionally infested by aphides, which are either a cause or a symptom of weakness and bad health; it has been abundantly proved that the aphides are present without causing the disease, and the disease exists without the presence of aphides; the species, too, which has been accused of causing the disease, and has in consequence been extensively distributed under Mr. Smee's direction as a microscopic object, turns out to be a common species occurring on many plants, and never before suspected of peculiarly malignant influences. Much better founded is the supposition that an internal fungus is the immediate cause of the potato disease, but until we can determine whether it really produces the decay or only arises out of it, and what are the causes, atmospheric or otherwise, of its prevalence in par-

ticular seasons, we cannot acknowledge the resources of science to have been exhausted in vain against this mysterious plague. It deserves consideration, whether all the remedies that have been employed with most appearance of success may not have their efficacy accounted for by their destroying the vitality of the spores of the fungus in the sets, whilst the presence of these spores from other sources would explain their occasional failure. On the whole, I cannot but think the fungoid theory the most rational. We have seen at least that the aphid theory is entirely without foundation; that of the wearing out of the varieties is disproved by the notorious fact, that all varieties, new or old, are about equally liable to the disease, none more so than seedlings, and even seedlings raised from seed brought from the native country of the potato. The theory which attributes the disease to superfluous moisture occurring in particular seasons is disproved by its recurrence with very great variety in the character of the seasons, and in all sorts of situations, whilst the theory of the dependence of the plague on peculiar atmospheric states, electrical or otherwise, is too vague to be listened to in the absence of specific facts, and is only an indirect acknowledgment of entire ignorance on the subject. I need not now refer more particularly to the injuries suffered by domestic animals from the attacks of various insects, but none, I am sure, can possess even a slight acquaintance with the peculiar instincts of certain insect tribes, and the manner in which some of them accomplish such extensive mischief, without perceiving how usefully the knowledge of nature connects itself with the business of the farmer. Then there is the whole subject of our relations with the wild birds and animals of our country. Probably most country people are indiscriminate destroyers of all the wild creatures that fall in their way, whilst a few, influenced by feelings of kindness, or a regard to beauty, are indulgent to all excepting a few of the most obviously and extensively injurious. A little knowledge of Natural History would assist us in judging what creatures are really our enemies, and which we should protect as friends and allies, and would at the same time enable us to carry on the war most successfully where it is necessary from a just regard to our interests. If we recall to mind the silly prejudice to which the harmless and even useful hedgehog is so commonly sacrificed in England, or consider the general disposition to destroy birds without much distinction of kinds, we see how beneficial a little knowledge of natural science would be to the dweller in the country. It would thus be decided that the larger and more powerful birds of prey are enemies, because our domestic animals would be among the chief objects of their attack; but the owl tribe, feeding chiefly on small quadrupeds, aid us in our necessary warfare against mice and rats without doing us any material damage. The numerous insectivorous birds are all eminently useful, as are those which feed on small seeds, but a few of the frugivorous tribes feeding much on our favorite fruits can only hope for partial indulgence on account of their beauty



or their song. In the case of the omnivorous birds, which live during a large part of the year on grubs, caterpillars, and other insect prey which they hunt with admirable skill, but which also attack at certain seasons grain and roots, we are obliged to strike a balance between the benefit and the injury we receive in which a sense of the happiness of the creatures and admiration for their beauty, and their wonderful instinct, must be allowed some weight in their favor. Such creatures may reasonably have their increase somewhat limited, but if we had the power utterly to destroy them we should soon feel the evil we should thus have brought upon ourselves. We have read of instances in which the extermination of the common European sparrow has been attended with disastrous consequences to the farmer; and although the rook is loudly condemned by some, the sight of numbers of them following the plough, picking up grubs, worms, and insects, should cause the considerate farmer to relent, even though indignant at thefts among his potato set and his ripening grain. Mere illustrations taken from familiar objects in England will show the importance of similar considerations here, and will satisfy every one that the spirit of wanton destruction and persecution often indulged against the inferior animals is as unwise as it is barbarous; that we should destroy only what we evidently perceive to be injurious and unfitted to dwell in any connection with ourselves, and should see with pleasure the various races of animated beings enjoying themselves around us so far as they may be permitted to do so without any serious interference with those pursuits which are essential to our welfare, and which are manifestly designed to exercise our industry and skill. In respect to all the inferior animals we may accept of the decision of the poet:

If man's convenience,  
Or health or safety interfere, his rights  
Are paramount and must extinguish theirs.  
Else they are all, the meanest things that are,  
As free to live and to enjoy that life  
As God was free to form them at the first,  
Who in His sovereign wisdom made them all.

Let me conclude with one word as to the pleasure to be derived from the study of Natural History in connection with a country life. What pursuit can we name in which the charms of beauty, variety, and the exercise of various mental faculties are so united? What can we imagine so well calculated to enliven our interest in the scenes of nature, to make each changing season only a change in our pleasures, and to connect the ordinary occupations, and even the sports, of rural life with observations and inquiries full of entertainment as well as usefulness.

Ladies and Gentlemen, I ought to apologise to you who dwell in the city for occupying your time with reflections, whose useful bearing is on a different mode of life from your own; but not to plead now that they are concerned with the advancement of our country and the happiness of a large proportion of its inhabitants, you will perhaps admit that here the bounds of city and country are so imperfectly marked, and so many of you are in hope to be the possessors of farms, that it is not an extravagant assumption to sup-

pose you are sufficiently familiar with agricultural affairs to listen with patience to what relates to them; but if my subject is in any degree out of place here, I am the more indebted to you for the kindness with which you have heard me. The naturalist welcomes every flower, finds new subject for admiration in every living creature; and, when he has exhausted what the unaided eye can reach, has boundless treasures in store to reward his minuter investigation, whilst every object, at the same time that it delights his mind, conveys to it serious instruction, impressing upon him a sense of the presence and the perfections of the great Creator, and preparing him to receive with humility and gratitude the revelations respecting his own condition and prospects of a being whom he adores and loves.

The men  
Whom nature's works can charm, with God himself  
Hold converse, grow familiar day by day  
With his conceivings, act upon his plan,  
And form to his the relish of their souls.

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## Editorial, &c.

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G. BUCKLAND, Esq., EDITOR.

H. THOMSON, Esq., ASSISTANT EDITOR.

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### HINTS FOR THE MONTH.

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A number of very interesting original communications will be found in this number of the *Agriculturist*. The growth of Farmers' Clubs in the country, is a most gratifying feature in connection with the progress of the farmers of Canada. By thus meeting and exchanging their views, much information on many interesting points will be received and imparted, and many errors in opinion or practice may be corrected. And the wide publication of such reports, by inviting farmers in all parts of the country to reflect upon many points of their practice, which, perhaps, they have heretofore adhered to without a doubt of the correctness of them, is calculated to produce the same effect on a large scale, as the discussions themselves do on a limited one. We hope these Farmers' Clubs will increase, and that they will all regularly send us some account of their proceedings. The communication of Mr. Wade, on the important subject of "The Importation of Cattle," is deserving of much attention, and we hope the discussion of this matter may lead to some useful practical result. An interesting communication in hand on "The modern system of Drainage, and its applicability to Canada" is alluded to in another place.

The somewhat unusual length of the above mentioned communications, and of the others not especially alluded to, must serve as an apology for curtailing our usual monthly remarks under the heading of this article. This, however, is of the less consequence, as the work to be performed on the farm during this month is, to a great extent merely a continuation of that for the last two months. Cattle, however, will require increased attention and a liberal supply of nourishing fodder, lest they fall off too much in condition as the trying weather of spring approaches. Early lambing ewes also will require to be carefully tended. Let those that show symptoms of yearning be shut up in a warm room in the evening, lest the newly dropped lambs perish during the cold of a February night. It is necessary, also, to see that the ewes have a liberal supply of milk to support their lambs, and if not, that the lambs be assisted by a little cows' milk, either warm from the cow, or warmed artificially at the fire. When large flocks are to be attended to, the shepherd may carry a little milk in a vessel inside the breast of his coat, in order to keep it of the proper temperature. A few turnips or mangel wurzel, along with sweet nourishing hay, will be useful in stimulating the flow of milk from the dam, and in a few days, by careful attention, the lamb will, generally, be able to get about with its mother.

One important branch of work during this month, in portions of the country where timber is still abundant, will be the splitting of rails, and drawing them while the ground is still hard, to the places where they will be required for fencing in the spring. In settlements of older date, where other expedients have to be adopted than the common rail fence, the getting lumber from the saw mill, and cedar or oak posts for fencing, will engage attention. A plan of fence proposed by Mr. John Wade of Cobourg, as given in the Report of the Hamilton Farmers' Club, in a late number of the *Agriculturist*, is deserving of trial, and would, we think, be found strong and economical.

The making of maple sugar, will probably take place to some extent during this month, in portions of the country where the maple tree is

still abundant. Having in former volumes of the *Agriculturist* given full details of the most approved mode of manufacturing this article, we will not allude to it at length now. But it will be worth while to take pains to make a good article, that will either be pleasant to use, or that will command a ready sale. In order to do this, it is necessary to observe perfect cleanliness in all parts of the operation, regularity in gathering the sap, and to take care to avoid burning in the boiling. It is worth the farmer's attention also to take care and not injure his maple trees any more than can be avoided, as the day may arrive when a wanton destruction of the native growth of the forest, will be regretted.

But soon the approach of blustering and active Spring, will call upon the farmer to rouse up all his energies, for the operations of that busy season. Let him not then be caught "napping," and let no arrears of winter work then cause him to loose even a day in getting his seed into the ground, as soon as it is in a proper condition of warmth and dryness to receive it.

#### THE SMITHFIELD FAT CATTLE SHOW.

This world-renowned Club held its Annual Exhibition in the Bazaar in Baker Street, on the 7th, 8th and 9th days of December 1853, and as usual attracted a large degree of public attention. We condense, for the information of our readers, a few of the more prominent features of the Show, from two of the highest Agricultural authorities in England, the *Mark Lane Express* and the *Agricultural Gazette*.

The cattle department was well sustained as a whole, each breed having animals of superior excellence, and the *over feeding* practice, against which numerous and loud objections were formerly made, appears now to be discontinued. Most of the animals were so fed as best to suit the purposes of the butcher, as affording wholesome and agreeable food, and at the same time indicating the characteristic points of their breeding and fattening properties.

Our readers will recollect that for the past few years an increasingly keen competition has been kept up at the Smithfield Show, between



Short-horns and Herefords, and with results that would indicate that the latter breed was making certain, if not rapid, progress towards that high state of excellence for which the former has so long been celebrated. And this, we believe, to some extent, to have been the case, notwithstanding a different result was obtained at the late Show. The improvement of other breeds is, most certainly, no disparagement to Short-horns, which have been the objects for so many years of the most careful and scientific attention and liberal expenditure; so much so, indeed, as to place them in the first class for general purposes.—“The Short-horn cattle (observes the *Mark Lane Express*) of this year carried away the chief prize in the gold medal, as the best beast of any breed, most justly; thus raising that celebrated breed from the very general imputation of having retrograded for some years past.” This animal was bred and fattened by Mr. R. Stratton of Wiltshire, who has attained great celebrity for his Short-horn stock, which seems characterised for general usefulness. The *Express* remarks, “that much more refined Short-horns are found than Mr. Stratton’s;—finer and more glossy in the skin, and more fashionable and attractive in the color; but for general purposes no equal competitor has yet appeared.” \* \* \*

“The Short-horn cattle have been exhibited in a more refined manner than in the Show of this year, but never more usefully. The carcasses have been much more fattened, but better frames of beef have not often appeared.” A very superior Short-horn Cow was shown as extra stock, which won the silver medal. Her colour was most fashionable, and her carcass handsome, almost beyond a fair equality.

In Herefords the first prize, for animals not over three years, deservedly went to Lord Radnor, and for animals above that age the prize was awarded to a very superior animal of great width and rotundity of carcass. There were some good cows shown of this breed. “The Hereford cattle (observes the *Express*) have, certainly, been very much better exhibited than in the show of this year, and more especially the oxen of that breed.” The unsuccessful animals are said to have had, as a class, more relative merit than the prize beasts.

In Devons the chief prize went to the Earl of Leicester, for an ox under three years old. “The appearance was neat and feminine, almost beyond example, and the carcass was fleshy in a uniform covering. The twist was narrow, as happens with the Devon cattle. The Holkham cattle are known by their very compact symmetry and general contour.” Among the cows and heifers of this beautiful and symmetrical breed there were several samples of rare excellence. “The Devon cattle (says the *Express*) were well exhibited, though wanting the curly coat of hair and thick gelatinous skin in the stock of Mr. Quartly, which never failed to attract our attention, and always obtained a superior notice. The Holkham animals are too small, too silky in the skin, and too thin in the hairy covering. The symmetry is unquestionable. \* \* \* \*

One opinion has long maintained, that the Devon cattle being enlarged in the size, widened in the twist, with upright buttocks, and the horn reduced to one-third of the present length, and retaining the symmetry now possessed, would exhibit a *ne plus ultra* specimen of animal organization in the genus of cattle.”

In the cross breeds there was nothing deserving very special notice, except a few good specimens of Galloway and Highland steers. The Scotch cattle were badly exhibited, particularly the Argyle breed. Two good specimens were shown of Long-horn Cows, one of which obtained a prize. The length of body of this breed is the chief and almost the only recommendation; the lightness of the forequarters sinks the animal into neglect. A most handsome Durham and Galloway Scott heifer, polled, and beautifully variegated in color, obtained a prize. The *Gazette* remarks that “these breeds ought to be more highly encouraged than they are,—not perhaps by such societies as the English Agricultural Society, which aims at the improvement of breeds, but by the Smithfield Club, which aims at improvement in the quality of the beef. There is, at all events, a fair claim on their behalf for equal patronage, but this they do not receive, and the expense of conveying animals such long distances as their exhibitors have to incur, ought to be taken into account.”

The sheep department was more than usually

fine. Mr. Foljambe obtained the gold medal and two first prizes, with the silver medal, as the breeder for Leicester Sheep, which for wool, carcase, and purposes of breeding, were considered highly excellent. In short-wooled sheep the Duke of Richmond carried off the gold medal and the three first prizes in these classes! The Duke labored hard for several years after commencing as a breeder of South Downs unsuccessfully, and we well remember hearing his Grace observe after several years, of unsuccessful competition, "that he would not, in consequence, relax in perseverance and diligence, but strive with greater energy till he triumphed,"—a consummation which his Grace now appears to have fully realised.

Pigs had a large exhibition in every class except in the large breeds, which are declining. Only one large animal was shown, but the small and middle breeds were both numerous and superior. Prince Albert was the chief winner of prizes in young and aged pigs, and also of the gold medal.

The *Express* has the following common-sense observations, "The success of His Highness, Prince Albert in the breeding of pigs, and his complete failure this year of the four oxen exhibited in Devons and Herefords, suggests the expediency or necessity of *breeding*, as well as feeding, the cattle, when the same success might attend the performance. There is much more merit in breeding cattle than in feeding them, the latter being altogether mechanical, and the former a very high exertion of intellectual judgment and calculation. There is little merit, comparatively, in refining the organization of swine, as the Hog is very susceptible of variations, and an almost universal cosmopolite. The frequent bearing of young, shows the effects of sexual intercourse much sooner than the yearly productions of cattle and sheep. Prizes for any animals might be continued to the breeders only."

There was no Poultry show held in connection with the Smithfield Club; but one was got up in a distant part of London during the same week, which was considered, taking all disadvantages into the estimate, a very creditable display. It numbered 585 pens, exclusive of

pigeons, comprising most of the common and improved varieties, to which liberal premiums were awarded.

Although the Smithfield Club was established for the sole purpose of encouraging the fattening of animals, and has never awarded premiums to the mechanical department of Agriculture yet, for several years past the number of improved implements and machines has gone on rapidly increasing, insomuch that the Directors of the Show have experienced great difficulty in making room for them;—the only encouragement the Society gives. Manufacturers are eager to avail themselves of the opportunity for showing off their productions, and a large amount of orders are taken. Although the space allotted to this department has been more than doubled of late, it is still found altogether insufficient, and must be yet further increased. Among the new machines we have only space to mention Lawson & Company's Flax-Scutching Machine, which is spoken of as being one of the most elegant specimens of inventive skill that has ever been witnessed. By this machine flax is both broke and scutched in the most perfect manner by one operation, and in an incredibly short space of time. The American Threshing Machine attracted much attention, and it was thought, with some modifications, that it might be adapted to English wants and use. Clayton's Brick-making and Drain Tile machines were to be seen in operation; they have received some important improvements, and commanded general attention. The one-horse machine will make a thousand bricks per hour of the best description.

The business of the Exhibition was wound up as usual by a public Dinner at which several interesting speeches, containing either fresh information or suggestions of improved modes of operation, were delivered by a number of influential landowners and practical farmers.

#### IMMENSE LOSSES ON THE IMPORTATION OF STOCK.

The year 1853 has proved very unfortunate to a number of individuals on this side of the Atlantic, who have been led by a laudable and enterprising spirit to import the improved breeds of farm stock from Great Britain. A number



of fine animals have perished, from one cause or other during the voyage, and our own Province has largely shared in these disasters.

Mr. W. B. Crew, of this city, has, we regret to say, been a great sufferer. Mr. Crew reached home a short time since, with less than one half of the animals which he purchased at great trouble and cost in England! He lost on the passage a valuable Stallion, a splendid young Durham Bull and Heifer, thirteen out of twenty-one, improved Leicester sheep, several of them among the finest that the flockmasters of England could supply, and out of 120 head of carefully selected Poultry, consisting of no less than thirteen of the most approved sorts, only 36 head reached their destination! Several dogs of different breeds, we understand, likewise shared the same fate. The Pigs alone reached Toronto unimpaired in condition and number. Mr. Crew has one very superior Agricultural Stallion left, (which cannot but prove highly advantageous to the country, however otherwise this very disastrous result may be to himself); a fine Durham Heifer, and a few excellent sheep and poultry. The chief causes of these disasters may be traced to the constant rolling of the ship, and the very boisterous state of the weather. We regret to learn that the stock were not insured.

A short time previously, Messrs. Stone & Iles, of Guelph, lost at sea a fine Durham Bull and seven, in calf, Heifers of the same breed, carefully selected from the herd of Mr. Langton, M.P. for the County of Oxford, and brother-in-law to the late Earl Ducie; also fifteen of the finest Cotswold Sheep, from those celebrated breeders, Mr. Bamer, Gloucestershire, and the Messrs. Gillet, of Oxfordshire. During a frightful gale, the sea swept the entire deck carrying the cattle at one sweep into the ocean. Messrs. Stone and Iles we are glad to learn were moderately insured.

A few months ago, the Messrs. Wade of Cobourg, who are so favourably known for their enterprise in this direction, lost at sea some very superior Durham cattle, as have also several others, both in the British Provinces and the United States.

We likewise learn from an esteemed corres-

pondent in New Brunswick, that Mr. Cuming, Veterinary Surgeon, was deputed to go to England to procure a number of the best Stallions of different breeds, to be distributed over the Province. Mr. Cuming selected eight animals, which are described as possessing first rate qualities; three of them however perished in a severe hurricane when the vessel had been only eight days out. The average cost of the animals was about £300 each.

These melancholy facts sufficiently indicate the necessity for some great improvements being effected in the modes of transporting live stock across the rough Atlantic. The system as commonly pursued by individuals is fraught with infinite anxiety and risk, and as the above facts indisputably show, is but too frequently attended by heavy pecuniary loss. We trust that something practically beneficial will arise out of a late application of the Board of Agriculture to the Government, urging the great importance of making arrangements with the proprietors of the line of Canadian Steamers, for the carrying of improved Stock at moderate rates, and with better and safer accommodations than are usually obtainable.

In conclusion we have much pleasure in calling the attention of our readers to Mr. Wade's article on the importation of cattle, in another column of this journal. The subject deserves to be fully investigated, and must not be allowed to drop without some practical results.

#### IMPROVED DRAINING MATERIALS.

We have much pleasure in stating that Mr. J. H. Charnock, who recently arrived from England, brings with him the best materials, and intends making Upper Canada his residence. Mr. Charnock has been for many years very favourably known in England, as a writer on the management and improvement of land, and has had extensive experience in the important art of draining, in all its branches. The public will be gratified to be informed that Mr. Charnock has in the course of manufacture, several of his well known Drain Tile Machines, which will be ready for operation as soon as the opening of the spring admits. The machine will make any

form of tiles or pipes, and full particulars as to price &c., will be subsequently announced. This information will gratify our respected Oxford correspondent, G. Alexander, Esq., and also several others, who have written to us at different times on the subject. We request the attention of our readers to an introductory paper on draining, which is now in type, and will appear in our next number, being unfortunately crowded out of this. It is by Mr. Charnock, and is one of a short series to be contributed by him.

Mr. Charnock's present residence is at Hamilton, and he will we have no doubt, be always ready to give any information, or undertake the superintendence of any work, relating to the before mentioned subjects.

ADDRESS OF C. P. TREADWELL, ESQ.,

PRESIDENT OF THE AGRICULTURAL ASSOCIATION OF UPPER CANADA, ON BEHALF OF THAT INSTITUTION

[The following address from the President of the Agricultural Association of Upper Canada has been addressed in circular form, to the officers of County Agricultural Societies, and we have much pleasure in giving it a wider diffusion.]—EDITOR.

*To the President, Vice Presidents, and Directors of the Agricultural Society of the County of—*

Under the provisions of Act 16 Victoria, Chap. 11, and sections 10 & 13, by which the present Board of Agriculture is regulated, four of its members go out this year.

The ballot for that purpose having taken place Colonel Thomson, R. L. Denison, Esq., Sheriff Ruttan, and John Harland, Esq., retire at the end of the year.

Col. Thomson is President of the Board, and I believe its first projector, and has been twice President of the Association; Mr. Denison has been for some years Treasurer of the Board and Association, and the duties of that office have been performed in the most efficient manner possible; Mr. Sheriff Ruttan has also been President of the Association, and has distinguished himself for zeal and enterprise in the cause of Canadian Improvement, both as a member of the Board, and as a private citizen, and Mr. Harland has been an active and useful member of the Board.

As these gentlemen are all eligible for re-election, I would recommend them to the notice of all the County Agricultural Societies, to be replaced on the Board. And if this suggestion should meet your views, I beg that you would send forward their names to the Bureau of Agriculture, Quebec, immediately after your Annual Meeting in February, according to the requirements of the Act.

It must have been a source of satisfaction to every well-wisher to the prosperity of the country to have witnessed the operations of the Agricultural Association for several years past, and the great advancement that has been made in agricultural science, and I think that the thanks of every County Society must be given to the gentlemen who founded the Agricultural Board and Association, for their indefatigable exertions in bringing them to their present state, and it is to be hoped that we may continue progressing until we reach the highest point of perfection in that science.

At the same time we must not overlook what the Manufacturer and Mechanic have done for the country. I feel great pride in stating that there were many things at the Exhibition at Hamilton, as well as at that at Montreal, which far exceeded those of the same class exhibited at the Crystal Palace in New York. It is to be hoped that no exertions will be spared to ensure our being well represented at the Sydenham Palace at its opening next Spring.

When I first became connected with the Association, I recommended the purchase of a full set of tents sufficient for all the purposes of our Annual Exhibitions, to be the property of the Society. I think the present a favorable time to press the application for funds for that purpose upon the Government. As our Exhibitions are yearly increasing in extent, a sum of at least Fifteen Hundred Pounds for each section of the Province should be obtained for this object. This would lessen the expenditure every year, and increase the amount of our Premiums. I would also recommend an appropriation to every Agricultural Society of a small sum to be exclusively bestowed in Horticultural Prizes, where no Horticultural Society is already established.

The establishment of Agricultural Libraries having been taken under the protection of the Superintendent of Education for Upper Canada, who is doing greater justice to the subject than had my suggestion, made in 1851, been carried out; and under that gentleman's direction an amount of reading matter of a moral, enlightening, and interesting character will be distributed throughout the Province of Upper Canada, (the rapidity of which distribution has been quite unparalleled,) and which it is hoped will be read with profit during the long winter evenings before us. I would here merely remark that the system followed in the Parochial Schools in Scotland might be adopted with advantage in the Public Schools in this country, where the teachers are invariably the librarians, and where they meet one evening in the week for the purpose of evening schools, but always to do their duty as librarians. It is frequently the case that Agricultural Clubs are formed at these meetings, and dissertations are written on subjects connected with science, and submitted to the teacher for discussion; and I would also recommend that an Agricultural Class Book be immediately prepared under the direction of the Superintendent of Education and the Professor of Agriculture, and introduced into every Common School in Canada West.



It is of much importance that every encouragement should be given by Societies and patriotic individuals to the wide dissemination of our monthly journal, *The Agriculturist*, published in Toronto, on very low terms. That periodical contains Reports of the proceedings of the Board of Agriculture, and of Farmer's Clubs, beside a large amount of original and selected matter of great interest to the farmer, and is a valuable medium of communication between individuals and Societies in different parts of the Province.

Having adverted to the rapid growth and advancement of our country, it may be proper to enquire into the causes which have produced such successful results. Our previous Annual Exhibitions have rendered very great service, and the forwarding of selected articles from the Agricultural and Manufacturing departments, as well as from the products of our forests and our mines to the Crystal Palace in London, in 1851, with the exertions of Mr. Logan, the Provincial Geologist, and other gentlemen from Canada, have been productive of them. I am of opinion that there is no other individual to whom Canada is so much indebted as to Mr. Logan, and I would suggest the propriety of immediately presenting him with a testimonial of the highest order. I would further recommend that the Government should be immediately petitioned to double his staff, that all his reports be compiled in one volume, to be printed and widely circulated, and that a second volume follow as soon as it can be completed.

The funds of the Society are in a prosperous condition, and the Government patronage will no doubt be continued to assist the Society in its operations.

The establishment of a Bureau of Commerce and Manufactures, to be connected with that of Agriculture, placed under the superintendence of some person qualified for the office, and whose whole energies could be directed to their advancement, with practical assistants in each of the several departments, would do much to improve our present condition.

I would fain hope that County Societies, as well as individuals, will do their utmost to render our next exhibition, to be held at London, the greatest that we have yet seen.

From the local position of London, it being the centre of an agricultural population of two hundred thousand, in point of soil and climate or agricultural purposes, the best in Canada, whose people will compare favorably with those of any part of Europe or America—these with the advantages of good roads, for which she is indebted to the Government and to the energy of her own people, and the recent construction of railroads, places her in a favorable position, together with the noble manner in which the counties of Middlesex and Elgin have come forward, and the offer of private subscriptions, amounting in all to £1,500; all these favorable circumstances with the co-operation of County Societies generally, must ensure a measure of success that has never yet been equalled among us.

The Exhibition will be held on the 26th, 27th, 28th and 29th days of September, and it is con-

fidently expected that that by time the railroads in that section will be completed, so as to enable London to be approached with the utmost facility.

From the experience of the past we have great pleasure in anticipating the assistance of the ladies in contributing articles of usefulness and embellishment, at the forthcoming Exhibition.

In conclusion, I feel confident that the assistance of the Bureau of Agriculture, the Board and Association of the Province, with their officers, and the Local Committee, and the liberal offer of the Great Western Railroad, tendered through Wm. Niles, Esq., Vice-President of the Association, and one of its Directors, these, with the blessing of Providence, must ensure the success of the Exhibition.

I have the honor to be, gentlemen,

Your obedient servant,

CHAS. P. TREADWELL,

*President of the Agricultural Association of U. Canada.*

#### SCOTCH AGRICULTURAL STATISTICS.

The Highland Society, acting under the auspices of the Board of Trade, have now completed the agricultural statistics of the three counties of Roxburgh, Haddington and Sutherland.

In the county of Roxburgh, the estimate of wheat (dropping fractions) was 14,205 quarters on an acreage of 5181; of barley, 64,050 quarters, on an acreage of 14,615; of oats, 130,797 quarters, on an acreage of 28,832; of beans and peas, 5458 quarters, on an acreage of 1612; of turnip-seed, 44 quarters, on an acreage of 43; of turnips, 361,349 tons, on an acreage of 23,800; of potatoes, 8257 tons, on an acreage of 1451; of marigold, 114 tons, on an acreage of 161; and of carrots, 43 tons, on an acreage of 6.

In the county of Haddington, the estimate of wheat was 50,341 quarters, on an acreage of 15,339; of barley, 67,079 quarters, on an acreage of 12,809; of oats, 94,823 quarters, on an acreage of 16,802; of beans & peas, 16,734 quarters, on an acreage of 4809; of turnip-seed, 206 quarters, on an acreage of 157; of turnips, 203,154 tons, on an acreage of 1620; of potatoes, 23,976 tons, on an acreage of 4246; of marigold, 619 tons, on an acreage of 48; and of carrots, 1378 tons, on an acreage of 107.

In the county of Sutherland, the estimate of wheat was 863 quarters, on an acreage of 217; of barley, 15,797 quarters, on an acreage of 3643; of oats, 24,837 quarters, on an acreage of 6569; of beans and peas, 145 on an acreage of 90; of turnip-seed, 1 quarter and 6 bushels on an acre; of turnips, 32,939 tons, on an acreage of 2090; of potatoes, 17,298 tons, on an acreage of 2506; of marigold, — on an acreage of —; and of carrots, 15 tons on an acreage of 1½.

The general abstract shows the aggregate estimates of the three counties as follows:—estimates of wheat, 65,410 quarters, on an acreage of 20,738; of barley, 147,927 quarters, on an acreage of 31,068; of oats, 160,458 quarters, on an acreage of 52,233; of beans and peas, 22,338 quarters, on an acreage of 6542; of turnip-seed, 253 quarters, on an acreage of 202; of turnips, 597,493 tons, on an acreage of 42,159; of potatoes, 49,562 tons, on an acreage of 8208; of marigold, 734 tons, on an acreage of 61; and of carrots, 1436 tons, on an acreage of 114.

# Literary and Miscellaneous.

WILLIAM McDUGGALL, Esq., EDITOR.

## CLIMATIC INFLUENCES.

What is the cause of those marked changes which take place in the human organization on this Continent? The subject is one of great interest, and has often engaged our attention, but neither from books, nor conversation with scientific men, have we been able to obtain a very satisfactory explanation. That the original form and features of the first settlers in the United States have been entirely lost, and that in the most Eastern of the New England States, where the least mixture has taken place, a distinct American type has been produced, are facts that cannot be disputed. A "lean Yankee," is a common expression even in Canada. The tall frame, long neck, fleshless body, coarse hair, thin features, colorless complexion, and feverish activity of the Eastern Yankee, are characteristics that have appeared within the last two hundred years. They are most strongly marked where there has been the least mixture of race, and almost disappear in the Atlantic cities, where that mixture has been greatest. What is the cause, or causes, of this deterioration, for such it must be considered, of the human animal? And do not all animals deteriorate in the new world? If the cause is not local, but universal, and constant, why has not the aboriginal race been affected by it? Or, does it require more than two hundred years for animals to become acclimatised on this continent?

Various have been the speculations on this subject. Some have attributed the physical changes constituting this American type, to mental activity, restlessness, and indigestion, &c. But is it not obvious that these are rather effects than causes? What *causes* the nervous energy, and the anxious disposition that distinguish the American from the European? We must look deeper for the true explanation. We have heard tight lacing, want of exercise, and indoor habits of females, and indulgence in sweetmeats, pickles, &c., by children, assigned as causes of this physical degeneracy. But though some of these practices may aid the primary cause, they are themselves, evidently but secondary. We observe in Canada the same tendencies. The second generation exhibits many features of the American type; and in the third, these are still more strongly marked. Even the peculiarities of speech—the drawling, nasal tones of the yankee—seem indigenous in the new world. It is mentioned as a curious fact by Sir Charles Lyell, that the native Anglo Australians bear a considerable resemblance to the Anglo-Americans "in look, and manner of speak-

ing which," he says, "is a mystery, for there is certainly no analogy between the *climates* of the two countries."

Climate has great influence upon plants, frequently changing their form, and improving or deteriorating their substance. Why may it not exert an equal power over animals? We believe the cause of changed "looks" in the natives of America, must be sought for in the climate, and it is not improbable that the "manner of speaking" depends on physiological peculiarities produced by the same cause. A distinguished naturalist, M. Desor, in an essay recently read before a meeting of the learned societies of Switzerland, on the climate of America, has developed the theory of a climatic cause for the degeneration of race in this country, at great length. He brings an array of facts to support his views. He tells us that when German and Swiss immigrants arrive in New-York, they generally find that the climate does not differ much from their own, but that after a time they begin to notice little differences, which compel them in spite of themselves, to adopt the American system of living—a system which on their first arrival they invariably condemn. They know, indeed, that the Northern States lie in nearly the same latitude as Central Europe, and the well-informed among them understand that the isothermal circles coincide still more exactly. Add to this that they learn by experience that the winters in the neighbourhood of New York and Boston are about as cold as at Frankfort, Basle or Zurich, and the summers at least as warm, and yet after all there is a difference which they cannot understand.

The effects of this difference in climate are seen as well in some of the most ordinary operations of everyday life as in its influence on certain trades. German immigrants find to their astonishment on a washingday, that their things dry full twice as quickly, even in the depth of winter, as in Europe. Accustomed too, to bake bread for family use only once in some two or three weeks they are necessarily surprised when they discover that here on the second or third day it becomes hard, dry and unpalatable: German housekeepers find, that this dryness of atmosphere has its advantages, inasmuch as vegetables and fruits, of all kinds are more easily preserved throughout the winter than in their own Fatherland. The Hamburger, although it is colder here at Christmas than in his native city, seldom sees those frosted windows to which he has been accustomed from childhood, as there is rarely sufficient moisture in our atmosphere to produce them. "Many additional instances of the effect of the American climate, on the ordinary routine of life," observes M. Desor, "might be given, and I could also point out others where it affects the person. For



instance the hair soon loses its natural moisture and becomes dry."

But there are other facts equally remarkable. "No sooner are the walls of a building plastered than the tenant may move in without any fear of rheumatism or those sicknesses which would be the inevitable consequence of so doing in Europe. So too the plasterer himself can lay on the second coat at once; while on the other hand the upholsterer and piano-forte manufacturer must be very careful in selecting their wood, for what would be amply seasoned in Europe would soon crack and split in America."

Our author is evidently speaking of the Eastern and Middle States, for this extreme dryness of the atmosphere does not prevail in Western Canada, nor in those States bordering the great Lakes.

The number of rainy days in America, if we except perhaps England and Norway, is not less than in Europe generally. But here the air never retains the moisture; no sooner does it cease raining than the hygrometer commences at once to sink, and soon shows that the atmosphere is as dry as ever. This dryness of the American climate is very readily explained by our savan. In America, as in Europe, westerly winds chiefly prevail. They proceed, however, to the coasts of Europe, loaded with the moisture which they have collected during their passage across the ocean. Consequently, rain generally accompanies them. The westerly winds reach the middle and Eastern States only after passing over a whole continent, and when they have lost a large portion of their moisture. Therefore they seldom bring rain with them.

In considering the action of our climate on animals and plants, it would seem as Buffon has observed, that while the animals generally that have been introduced here, have on the whole, rather deteriorated from the parent stock, plants on the other hand, have decidedly improved. From this it is argued that America is peculiarly the continent for the vegetable, while Europe is that for the animal kingdom. The history however, of North America is of too recent a date to afford any very just grounds for determining the modifications the animal kingdom may have undergone, and our author prefers rather looking at man himself.

He attributes the peculiar characteristics of the New Englanders to the influence of climate. "That some of these," he says, "depend on climate is seen by the fact that a trip to Europe will give fullness to the cheek, while the Englishman rarely grows stouter, but almost invariably thinner during his sojourn in America." To the dryness of the atmosphere too, M. Desor would attribute the feverish activity which seems to belong to the American. He considers that the want of moisture in the air may act to some extent on the nervous system, and supports his theory by noticing that a long con-

tinuance of a north-east wind—the wind that corresponds in dryness with the westerly one in America—produces the same kind of restlessness and activity among the inhabitants of the Jura. If a dry wind blowing for a short time only among the Alps, can exert any such influence, we can easily imagine that the comparative thorough dryness of the American climate may have something to do with that constitutional activity which is so rapidly advancing us in all the arts of civilized life, while it is at the same time producing a gradual deterioration of the physical man.

M. Desor's views come to us through an imperfect fragmentary translation, and we are, therefore, unaware if he produces any facts to justify the belief that the immigrant races will, in a few centuries, become thoroughly acclimatised. "A careful study," says Lyell, "of the present distribution of animals and plants over the globe, has led nearly all our best naturalists to the opinion that each species had its origin in a single birth place, and spread gradually from its original centre." Now if we adopt this view of "specific centres," and admit the Sacred Record as authority on questions of geography, we must conclude that the aboriginal tribes migrated from Europe at some remote period, and are merely "settlers" of an older date. The well-built frames, and due proportion of muscular and adipose substance displayed by many of these tribes, prove incontestibly that the deteriorating climatic influences of this continent may be overcome in a long course of years. But whether the descendants of the first settlers of New England (more than two centuries having now elapsed) exhibit any evidence that they have reached the lowest point in the descending scale, and have begun to ascend to the original type, is a point of much interest, and one that we should like to see investigated. We have met with no facts to support such a conclusion; the evidence produced rather goes to show that the nadir of physical deterioration cannot be reached in two centuries. Sir Charles Lyell seems to be of this opinion. In his "Second Visit to the United States, &c.," he remarks (Vol. 1, p. 123) that,—

"Many who have been born in America of families settled there for several generations find their health improved by a visit to England, just as if they returned to their native air; and it may require several centuries before a race becomes thoroughly acclimatised."

And after mentioning the fact that the atmosphere is drier, and the annual range of the thermometer much greater in America than in corresponding latitudes on the Eastern side of the Atlantic, he says,—

"Even so cosmopolite a being as man may demand more than two centuries and a quarter before

he can entirely accommodate his constitution to such altered circumstances and before the successive generations of parents can acquire and transmit to their off-spring the new and requisite physiological peculiarities."

#### SURVEY OF THE PHYSICAL SCIENCES.

Man was early led to the study and contemplation of Nature. The day and night-heavens the varied surface of the earth, the deep forests and the beautiful and somewhat mysterious succession of the seasons could not fail to awaken thought. The free winds and the boundless extent that every where met his eye, agitated his soul with strange wonder and awe.

The cradle of the human race favored all this, and by a sweet necessity drew man to the embrace of Nature. That cradle was undoubtedly in Southern Asia. On all sides rose parapetted hills, broad streams hurried to the sea, and a genial climate fostered buddings of thought. The soul of man turned to Nature, as the flower turns to the sun. Admiration cheered the birth-place of the race, and in it appeared the early leafage of the physical sciences.

*The Physical Sciences embrace all the facts of Nature, classified on the principle of resemblance.* These facts have been accumulating through ages, and now form distinct branches of knowledge, such as Mechanics, Astronomy, Optics, Electricity, Magnetism, and Chemistry proper. These, and all their auxiliaries of implements, constitute the Physical Sciences.

The birth of these sciences is undoubtedly found in the Cosmogony of the Orient. Traditions of the creation are sown in all languages, and lie at the basis of all enquiries into the wonderful spectacle of Nature.

The birth of the physical sciences was succeeded by a strange religious observation. The shepherd, as he tended his flock, watched the fires of heaven as "they burned on their quiet way," till thoughts of worship stole into his heart; the caravan and travelling merchant, as they crossed the vast plateaus of Asia, saw and felt more than the wandering pedlar of Wordsworth, "A something that disturbed them with the joy of elevated thought." They observed

the forces and motions of heaven and earth, and laid up the rude materials of the physical sciences,

The religious element soon became predominant. The boundlessness of Nature excited awe. Mystery waited on her inexplicable and infinite diversity, and nursed into gigantic vigor the mystic superstition of the East.

This element was doomed to divide its power, and in some degree become the servant of a degrading selfishness. The love of *power* and *gain*, assisted by a subtle policy, invested the observations of Nature with imaginary awe. Superstition became a pampered thing, and the deformed *out-croppings* of the physical sciences appeared in *astrology* and the arts of *divination*.

From this oppressive thralldom, thought, after the lapse of ages, began to awaken. Minds here and there, stirred by the love of knowledge, brooded over the known facts of Nature, and warmed them into order and life. Travelling merchants brought new facts to view; caravans were induced to carry freights of knowledge as well as wares.

The banks of INDUS, favoured by Nature and Providence, became not only the nursery of the race, but also of the first civilization. W. Von Humboldt is justified in tracing up all the streams of philosophy that irrigate the world to that fountain.

*Chaldea*, we are certain, was the seat of early astronomical observations. As early as 720 B. C., eclipses of the moon were noticed and chronicled. Egypt, we have good reason to believe, made observations on the eclipses of the sun and moon about the time of the Exodus, 1491 B. C. The Chaldeans divided the day into twelve hours. The *sun-dial* of Ahaz is brought to view in the old Testament.

Mechanics were brought into notice at an early period in the history of the world. The forces of Nature were turned into the service of man. The ruins of Southern India and the pyramids of Egypt are indications of gigantic labor. Their construction must have required machines of no ordinary power. The labors of Archimedes in this department of physical science are familiar. The ancients ascribe



to him the invention of *forty* mechanical contrivances; the moderns regard him as the founder of Mechanics. The protracted defense of Syracuse against the Romans, sustained chiefly by his machines, is a wonderful fact in history.

#### MECHANICS.

Mechanics in some form, must have had an existence almost commensurate with the creation of man. Power and motion belong to life. Their application was needed even in the preparation of food and clothing. Implements were required in the erection of the first hut and the formation of the first battle-club.

The growth of mechanics must have been rapid. The love of power is deeply seated in the heart; and every instrument that could multiply its force would be eagerly sought. Mechanical inventions were the earliest indications of inventive skill. What they were in ancient times, history only indicates—indicates in the ruins of India, Babylon, Egypt, Tyre, and Asia Minor.

Archimedes must be regarded as the founder of this branch of physical science. He was born in Syracuse, 287 B.C. He laid down the principles of *statics* and *hydrostatics*, and invented many machines.

Stevinus, an engineer of the Lower Countries, is the first person in modern times who advanced beyond the ancients. He lived in the sixteenth century.

Galileo promoted this branch of knowledge. He was born at Pisa, 1564. To him we are indebted for the first great steps in modern mechanics. Huggins contributed something. He explained the doctrine of the pendulum. Newton completed the superstructure of the principles of mechanics.

Since his day, the application of these principles has been incessant and varied. England and America have attained an eminence among the nations, on account of their machines. In the latter country, the geometrical lathe of Durand and the press of Hoe cannot be passed over. The former adorns our notes with the most beautiful machine-work, and by rendering counterfeiting impossible, gives security to our currency. The latter by its astonishing capacity, throws off 20,000 impressions in an hour.

The advantages arising from *applied mechanics* are of the greatest importance. To these advantages, as much as to anything else, England and America owe their greatness. Two structures may be named here,—the tubular bridge over Menai Straits, and the Crystal Palace. They are good instances of the perfection of applied mechanics, and the estimation in which the subject is held by the public.

#### ASTRONOMY.

The ancients were early drawn to the study of the heavens. The Chaldeans and Egyptians excelled in celestial observations. They named the planets, noticed eclipses, marked the constellations of Orion, Pleiades, Hyades, and Bootes,

and divided the day into twelve hours. Speculation naturally arose. It was fruitless. The stars appeared as so many brilliant points revolving in a moveable sphere. Their explanations were only vague guesses at truth.

Astronomy lay in this state till Europe awoke from the dead lethargy of the middle ages. It was the first science that fixed the awakening mind. Purbech and Regiomanus prepared the way for Copernicus, the herald of the true system. He gave his views to the world in 1543. Kepler, born in 1570, added much to astronomical knowledge. His observations and reasoning were profound. He discovered the *ellipticity* of the orbits of the planets, and laid down what is known as the three *laws of nature*. While Kepler was thus engaged in explaining the motions of the planets, Galileo, the martyr of astronomy, constructed the telescope. The moon was observed, and a resemblance between the heavenly bodies and the earth indicated. The armed eye gazed upon new fixed stars, and the satellites of Jupiter and Saturn.

With *Newton*, the study of astronomy commenced a new era. The time for establishing the true system on principles had arrived. The motion of the heavenly bodies was compared with the laws of motion as known upon the earth.—The great law of attraction was discovered.

During the last fifty years, the progress of astronomy has been rapid. Instruments have been perfected, and their range enlarged. Lord Rosse's telescope has found a record in every daily sheet. Observatories are multiplied. The theory of comets has been explained. A single year's observations at Washington gives us 15,000 stars, most of which are unknown. New planets are added almost monthly to the record of worlds.

#### OPTICS.

The science of optics was long neglected. The subtle nature of light seems to have eluded the observations of the ancients. Euclid began its study.

In the eleventh century, Alhazen wrote a treatise on optics. He was acquainted with the anatomy of the eye. Bacon, in the seventeenth century made some good remarks on the uses of lenses. Spectacles were invented by Armato, a Florentine, 1313. In the fifteenth century, Maurolicus pointed out the crystalline lens of the eye, and explained in a good degree the nature of long and short-sighted eyes. Baptista Porta, a Neapolitan, invented the *Camera Obscura*, about the year 1560. It led Kepler to explain the action of the eye in vision. The rainbow was explained in 1610, by Dominis. In 1590, Jans, of Middleburgh, in Zealand, invented the telescope. The news of this was immediately communicated to Galileo, who constructed one and turned it to the heavens. From this time forward, the science of optics rose into notice. Descartes, Gregory, Barrow, Higgins and Newton labored to promote its growth. The theory of light proposed by Newton, for a long time commanded respect. It was the theory of *emission*. Light is thrown off from all luminous bodies. The

theory of Huggins is now ascendant. It is the theory of undulation. Light is a subtle ether, pervading all space, and, when thrown into a vibratory state occasions vision.

ELECTRICITY.

This branch of physical science is wholly based on experiment. It was known to the ancients only in some natural phenomena. The Greeks were acquainted with the attractive and repulsive powers of amber, the mineral from which electricity takes its name.

In 1720, Stephen Gray made some discoveries. They respected conductors, non-conductors, and insulated bodies. Du Fay, in 1773, added to these discoveries. He regarded electricity as consisting of two kinds, and distinguished these by the names *vitreous* and *resinous*.

The first successful attempt to explain the facts of electricity was made by Dr. Franklin. With him, it took the form of a science, and since his day, has risen to a proud rank through the labours of Coulomb, Volta and Faraday. The *telegraph* is the noblest instance of its application—the invention of Sydney Morse.

MAGNETISM.

Magnetism had its beginning in a knowledge of the loadstone. The Chinese were first acquainted with it. There is no room to doubt that the *compass* was brought from the East.

Gilbert, in the time of Elizabeth, is the first one who attempted to collect the phenomena of magnetism, and classify them. From that time observation has been adding valuable discoveries.

Columbus observed the declination of the needle in his great voyage of discovery. The dip was first noticed by Norma in 1576. Halley attempted to explain the declination. The earth was regarded by him as a magnet. The *daily variation* of the needle was discovered in 1772 by Graham. Oersted of Copenhagen discovered the effect of electric currents on the needle, and led the way to electro-magnetism. Faraday has done much for electricity. His discoveries are of the highest order. As a consequence of these inquiries, we now look upon *light*, *electricity*, and *magnetism* as different functions of the same principle. The magnetic poles of the earth and the sublime phenomena of the aurora borealis and australis are owing to electric currents.

CHEMISTRY.

Chemistry proper now claims our notice. Unlike most of the sciences, it sprung directly from delusion and superstition. Its parentage is found in magic.

Freed from this connection, it proffered its aid to medicine, and was accepted. Shortly after this alliance, it began to speculate on the nature of the medicines it assisted in compounding.—These speculations gave it new life. It came forth into public notice, and did good service for miners and artists. The Arabians studied it in the form of Alchemy.

Chemistry, as a science, was unknown to the ancients. It is based strictly on experiments, and has taken its true rank within the last century. Its progress has been a brilliant one, and

is owing to the labours of such men as Davy, Beecher, Black, Cavendish, Dalton, Faraday.

Already it has reached to a high degree of perfection and utility. The four elements of the ancients have been extended to sixty-one, the laws of chemical attraction explained, the nature of substances brought to view by analysis, and the results applied to manufactures, agriculture, and the arts.—*Condensed from Popular Educator.*

FARM ARCHITECTURE.

There can be no greater folly than that exhibited by the farmer in this country, who expends a large sum of money in the erection of a family mansion. In England, and in those countries on the Continent of Europe where the laws of entail, and the accumulation of immense tracts of land in the hands of individuals, ensure the transmission of estates to the remote descendants of the present owner, there may be some excuse for building "Seats," and "Halls," and "Castles" at an immense cost. But in the United States and Canada, there should be no castles, except "castles in the air." We know an instance in the neighbouring State, which proves in a striking manner the folly of attempting to ape, on this side of the Atlantic, where all classes are equal, the extravagance and splendour of the *privileged* classes in Europe. A hereditary landholder, whose estate in broad acres, was very large, took it into his head to build a Mansion. It cost \$100,000! The expense of this structure, and other extravagancies, involved him in difficulty; his rent roll fell off, and getting into law with his tenantry, he was obliged to sell the greater portion of his estate. The "Mansion" that cost \$100,000, did not bring \$50,000, and the purchaser even at that price, was in our opinion, *half* as big a fool as the original owner. The man who sinks an ordinary fortune in a house, throws it away. He may be rich enough to afford the luxury while he lives, but when he comes to divide his property among his children, he discovers the loss. It is not worth half its cost to any of them, and it cannot be sold in all probability for more than a third of its cost to a stranger. Therefore, we conclude that it is folly for the farmer, folly for the merchant, folly for the richest man amongst us to build a *costly* mansion, or miniature castle. The conditions of society, the institutions and



laws of the country, the genius and habits of the people,—all pronounce it to be *folly*.

But all this being admitted, we see no reason why the farmer, as well as the merchant or the professional man who is about to build a residence, should not adopt a pleasing style, and provide every comfort for himself and his family that can be secured at a *reasonable* cost. An ill-constructed, uncouth, miserable tenement, with which those who inhabit it are satisfied, indicates a spiritless, apathetic state of mind; and gives no hope of elevation of character, or improvement in condition, either physical or moral. While deprecating extravagance and gingerbread display, we would recommend utility, neatness, and a proper regard for effect. The difference in cost between an awkward structure that violates all the rules of propriety and good taste, and a building executed in an agreeable style of architecture, at once pleasant to the eye and convenient in arrangement, is much too small to make a man of sense and refinement of feeling choose the former. We have been glad to notice a very general improvement in the new farm houses erected in Canada within the last few

years. The ambitious and flashy style so much in vogue on the other side of the line, has not gained much foothold in this country, and is giving place to a more correct taste even among our neighbors.

In former volumes, we have occasionally given designs for buildings suited to the wants and circumstances of this country, some of which have been copied. Subscribers have thanked us for the information thus furnished, and some have expressed a wish for a greater number of designs, from which they could make a selection. They do not consider the great expense which these illustrations involve;—but believing that they are as interesting and useful as any we could present, we shall from time to time give our readers the benefit of such new designs as may appear adapted to their wants. In many cases, a cottage, rather than a farm house, is wanted; sometimes by small farmers, mechanics, &c., sometimes by large farmers for members of the family, old or young. We give below the design of a neat cottage, which we find in a recent work on rural architecture.



FARM COTTAGE.

The above cottage is suitable for the small farmer, or cottager, who requires room, and ample conveniences. It is a first class dwelling, of its kind, and, in its details and finish, may be adapted to a variety of occupations, while it will afford a sufficient amount of expenditure to

gratify a liberal outlay, to him who chooses to indulge his taste in a moderate extent of decoration and embellishment.

The ground plan of this cottage is 30 x 22 feet, in light rural-Gothic style, one and a half stories high, the posts 14 feet in elevation. It has two

chimneys, passing out through the roof on each side of the ridge, uniformly, each with the other. The roof has a pitch of 45° from a horizontal line, giving it a bold and rather dashing appearance, and deeply sheltering the walls. The side gables give variety to the roof, and light to the chambers, and add to the finish of its appearance; while the sharp arched double window in the front gable adds character to the design.

The deep veranda in front covers three-quarters of its surface in length, and in the symmetry of its roof, and airiness of its columns, with their light braces, give it a style of completeness; and if creeping vines or climbing shrubs be trained upon them, will produce an effect altogether rural and beautiful.

Or, if a rustic style of finish be adopted, to render it cheaper in construction, the effect may still be imposing, and in harmony with the purposes to which it is designed. In fact, this model will admit of a variety of choice in finish, from the plainest to a high degree of embellishment, as the ability or fancy of the builder may suggest.

#### INTERIOR ARRANGEMENT.

From the veranda in the center of the front, a door opens into a hall, 17×7 feet, with a flight of stairs leading in three different angles, to the chambers above. Opposite the front door is the passage into the living room, or parlor, 17×15 feet, lighted by three windows, two of which present an agreeable view of an adjacent stream and its opposite shores. At the line of partition from the hall, stands a chimney, with a fireplace, if desirable, or for a stove, to accommodate both this room and the hall with a like convenience; and under the flight of stairs adjoining opens a china closet, with spacious shelves, for the safe-keeping of household comforts. From this room, a door leads into a bedroom, 10×13 feet, lighted by a window opening into the veranda, also accommodated by a stove, which leads into a chimney at its inner partition. Next to this bedroom is the kitchen, 12×13 feet, accommodated with a chimney, where may be inserted an open fireplace, or a stove, as required. In this is a flight of back chamber and cellar stairs. This room is lighted by two windows—one in the side, another in the rear. A door leads from its rear into a large, roomy pantry, 8 feet square, situated in the wing, and lighted by a window. Next to this is a passage, 3 feet in width, leading to the wood-house, (in which the pantry just named is included,) 16×12 feet, with nine-foot posts, and roof pitched like the house, in the extreme corner of which is a water-closet, 5×3 feet. Cornering upon the wood-house beyond, is a small building, 15×12 feet, with ten-foot posts, and a roof in same style as the others—with convenience for a cow and a pig, with each a separate entrance. A flight of stairs leads to the hay-loft above the stables, in the gable of which is the hay-door; and under the stairs is the granary; and to these may be added, inside, a small accommodation for a choice stock of poultry.

The chamber plan is the same as the lower floor, mainly, giving three good sleeping-rooms;

that over the kitchen, being a *back* chamber, need not have a separate passage into the upper hall, but may have a door passage into the principal chamber. The door to the front bedroom leads direct from the upper hall. Thus, accommodation is given to quite a numerous family. Closets may be placed in each of these chambers, if wanted; and the entire establishment made a most snug and compact, as well as commodious arrangement.

#### WINTER.

(For the Agriculturist.)

Winter, stern Winter has come, and all the associations connected therewith rush at once upon the mind; the dull, dreary day is ushered in with a snow-storm, and the monotony is only relieved by the "sound of the merry sleigh-bells," as the farmer with his sturdy team ploughs his way through unbroken snow drifts to the market. The forest trees, which but a few weeks ago were covered with leaves, affording at once shade and shelter to man and beast, are now stripped of their foliage, and through their naked branches the storm sweeps with a melancholy sound. The feathered songsters which sported among their branches, and enlivened us with their melodies, have gone to a more congenial clime; even the little squirrel, that was all activity a short time ago, betakes itself to some hollow log or tree where he has laid up his winter's stock of nuts, and waits in patience the return of spring. Yes! gray-haired Winter has come again; no doubt the farmer has been mindful of his approach, and is prepared to give him a "warm reception;" his cellars are made tight, his wood-houses well filled, his farming implements carefully laid up; plenty of wheat in the granary, oats for his horses, hay and straw for his stock. The wintering of stock is a very important matter to the farmer; and more especially now, that from them he derives much of his wealth. Wheat as an article of produce had not been for the last few years at all remunerative; and the intelligent farmer seeing this, had turned his attention to another object, viz., raising stock; such being the case, how necessary is it that all kinds of stock should be cared for now, when no longer able to provide for themselves; their stables should be tight and warm, humanity as well as economy points this out as absolutely necessary; when thus protected they keep their flesh on a less quantity of food. Cattle, especially, are often cruelly treated by exposure, when a simple shed could be made with a few boards, that would answer every purpose. They should not only receive hay or straw, but water, regularly. There should be a pump in every farm-yard.

Hogs should also have a warm sty, though cold does not affect them in the same way that wet does; however, a close sty is preferable,—it is a cruel practice to let hogs shift for themselves in winter. Sheep, being more tender and less able to protect themselves, have a peculiar claim on the farmer,—he should see that they are carefully penned, to protect them from marauding dogs or wolves, and regularly fed and salted. They will repay him well for his care.

R. S.



## POETRY.

[BRYANT stands in the front rank of American poets. His spirit, like the "Voice of Autumn," roams through fields and uplands, by brooks and shady streams. He is now getting old, but the following lines, in Graham's Magazine, for January, speak the language of "other days."]

## THE VOICE OF AUTUMN.

BY WILLIAM CULLEN BRYANT.

There comes from yonder height,  
A soft repining sound,  
Where forest leaves are bright  
And fall, like flakes of light,  
To the ground.

It is the autumn breeze,  
That, lightly floating on,  
Just skims the weedy leas,  
Just stirs the glowing trees,  
And is gone.

He moans by sedgy brook,  
And visits, with a sigh,  
The last pale flowers that look,  
From out their sunny nook,  
At the sky.

O'er shouting children flies  
That light October wind,  
And, kissing cheeks and eyes,  
He leaves their merry cries  
Far behind.

And wanders on to make  
That soft uneasy sound  
By distant wood and lake,  
Where distant fountains break  
From the ground.

No bower where maidens dwell  
Can win a moment's stay;  
Nor fair untrodden dell;  
He sweeps the upland swell,  
And away!

Mourn'st thou thy homeless state?  
Oh soft, repining wind!  
That early seek'st and late  
The rest it is thy fate  
Not to find.

Not on the mountain's breast,  
Not on the ocean's shore,  
In all the East and West:  
The wind that stops to rest  
Is no more.

By valleys, woods, and springs,  
No wonder thou should'st grieve  
For all the glorious things  
Thou touchest with thy wings  
And must leave.

## MISCELLANEOUS.

There is more fatigue in laziness than in labour.

Since the generality of persons act from impulses, much more than from principle, men are neither so good nor so bad as we are apt to think them.—*Hare.*

Satire is a composition of salt and mercury; it depends upon the different mixture and preparation of these ingredients that it comes out of a noxious medicine or a rank poison.—*Jeffrey.*

There is no use of money equal to that of beneficence; here the enjoyment grows on reflection, and our money is most truly ours when it ceases to be in our possession.—*Mackenzie.*

To-morrow.—"It shall be done to-morrow."—"To-morrow the case will be just the same." "What do you grant me one day as so great a matter?" "But when that other day has dawned, we have already spent yesterday's to-morrow. For see, another to-morrow wears away our years, and will always be a little beyond you."

"I would reprove thee," said a wise heathen, "if I were not angry." Should not Christians follow the example?

Some read to think—these are rare; some to write—these are common; and some read to talk—these form the great majority.

## TO CORRESPONDENTS.

W. P. Sparta, Yarmouth; Communication received too late for insertion this month, will be given in our next.

## TORONTO RETAIL MARKETS.

	January 31, 1854.
Flour—Millers' extra superfine, per barrel....	0 0 a 33 9
do Superfine do .....	0 0 a 31 3
Farmers', per 196 lbs.....	27 6 a 28 9
Wheat—Fall, per bushel, 60 lbs.....	6 3 a 7 2
Spring, per bushel, 60 lbs.....	0 0 a 0 0
Oatmeal, per barrel.....	0 0 a 35 0
Rye, per bushel, 56 lbs.....	4 0 a 4 6
Barley, per bushel, 48 lbs.....	2 9 a 3 6
Oats, per bushel 34 lbs.....	2 6 a 3 0
Peas, per bushel.....	2 6 a 4 0
Potatoes, per bushel.....	2 9 a 3 4
Apples, per bushel.....	2 6 a 3 0
Grass Seed, per bushel, 48 lbs.....	7 5 a 0 0
Clover Seed, per bushel.....	27 6 a 23 6
Hay, per ton.....	60 0 a 75 0
Straw, per ton.....	50 0 a 60 0
Onions, per bushel.....	5 0 a 7 6
Butter—Fab, per lb.....	0 8 a 0 9
Fresh, per lb.....	0 10 a 1 0
Lard, per lb.....	0 6 a 0 7½
Turkeys, each.....	2 6 a 3 6
Geese, each.....	2 9 a 3 3
Ducks, per couple.....	1 6 a 1 9
Fowls, per pair.....	1 0 a 1 6
Cheese, per lb.....	0 5 a 0 6
Pork, per 100 lbs.....	22 6 a 26 3
Fresh, per lb.....	0 0 a 0 5
Beef, per 100 lbs.....	22 6 a 27 6
Beef, per lb.....	3 a 0 9
Hams, per 100 lbs.....	45 0 a 50 0
Bacon, per 100 lbs.....	35 0 a 40 0
Wool, per lb.....	1 2 a 1 7
Sheepskins, fresh slaughtered.....	5 0 a 5 8
Calf-skins, fresh, per lb.....	0 0 a 0 6
Hides, per 100 lbs.....	22 6 a 25 0
Eggs, per dozen.....	1 0 a 1 3
Veal, per lb, by the quarter.....	0 3 a 0 4½
Mutton per lb, by the quarter.....	0 3 a 0 5
Coal, per ton.....	37 6 a 40 0
Firewood, per Cord.....	20 0 a 22 6

## THE CANADIAN AGRICULTURIST

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VOL. VI.

TORONTO, MARCH, 1854.

No. 3.

**Reports, Discussions, &c.**

**TOWNSHIP OF YORK FARMERS' CLUB.**

On Wednesday evening, 8th inst., a meeting of the members of the York Township Agricultural Society was held at Powell's Inn, on Yonge Street, chiefly for the purpose of considering the propriety of forming a Farmers' Club. Considering the very unfavorable state of the weather the meeting was well attended; among the company present we observed Messrs. E. and J. Snider, E. W. Thomson, J. and B. Bull, Professor Buckland, H. and J. Ross, G. Murray, J. Harris, W. Belles, J. Shuttleworth, G. Ward, T. Halkey, J. Goulard, R. Wood, J. Stevenson, W. Lee, G. Cunningham, J. McClean, &c., &c.

E. W. Thomson, President of the York Township Agricultural Society, took the chair, and after having called the meeting to order, introduced the business of the evening with the following remarks:—

In assembling together this evening, we manifest a desire to mutually benefit each other; and although I feel my own inability to bring forward anything in the way of a speech, I am happy to be able to inform you that I have succeeded, in accordance with your wishes, in inducing our friend Professor Buckland to come amongst us this evening, for the purpose of giving us a short lecture on some of the numerous subjects in which we are all deeply interested. But before giving way to Mr. Buckland, you will perhaps bear with me in making a few desultory remarks. The object we have in view is the advancement of the agricultural interests of our country; and

when we consider the peculiar position of this country, and the fact that nine-tenths of the population are directly dependant upon agriculture for their support, and that the other tenth can only prosper, as the great majority prosper, what can be of more importance to the whole mass of the population than the promulgation of that information which will have the effect of enabling the producer to obtain the largest amount of produce at the least possible expense from his soil; and to this end the assembling together on occasions like the present may be made highly conducive, because we have not only the opportunity of hearing theoretical opinions, but we have the benefits resulting from actual practical experience, which are no doubt of great use to hold in check sometimes, the fanciful flights of mere theorists; not that I apprehend there is any one of that description here on the present occasion, but we often meet with statements in the course of our reading, and sometimes in conversation, that are truly ridiculous; such for instance as a statement set forth in a catch-penny pamphlet published in Canada a short time ago, entitled, "Farming and Gardening made easy,"—in which, amongst other absurdities, was a method of destroying Canada thistles, by first cutting them down to the ground and then dropping a drop of spirits of turpentine into the hollow of each stalk; a mode about as practicable as the proposition to destroy fleas by catching them first and then choking them with Scotch snuff! Now, a Farmers' Club may be conducted in a way that will conduce to the checking absurdities of this kind, and bringing out useful information, by bringing forward at each meeting some important subject for consideration, by some one of its members appointed to do so at the previous meeting, in a written communication,—in which may be embodied not only his own views, but the opinions of others,



that he may be able to select from, authors that he may have it in his power to consult and make extracts from, always giving credit for the same, and stating the page upon which the extract may be found. This will induce a spirit of enquiry, and afford an opportunity in a conversational way, for all who choose to give their views on the subject under discussion, and also to refer to the opinions of such authors as they may have been induced, from having had a previous knowledge of the subject of discussion, to consult.— This seems to be the method successfully adopted by our brother Farmers in other parts of the country, and has had the effect of eliciting many highly interesting and useful remarks from the persons present, who perhaps have read very little. I am quite sure that every one will agree with me on this subject, who has read the interesting proceedings of the Farmers' Clubs established both to the east and west of us, and will be disposed to say as far as he has it in his power, to go and do likewise. Having made these few preliminary remarks, we will now, if you please, hear Mr. Buckland, and afterwards discuss the practicability of forming a permanent Farmers' Club upon a satisfactory basis.

Prof. BUCKLAND expressed his satisfaction at meeting so many farmers on such an occasion, and his willingness to render them any assistance in his power. He gave a brief sketch of the origin and history of agricultural associations in the British Islands, tracing their commencement to a small body of Scotch land owners,—who, upwards of a century ago, formed a Society in Edinburgh, for promoting the important art of agriculture. From that small and obscure beginning great results had followed; among them might be enumerated the Highland Society, which had now been near three-quarters of a century in active operation, giving birth to the present most influential national Societies of England and Ireland, and to the local Associations and Farmers' Clubs, almost without number. The impetus thus given to the agricultural mind of Britain had been immense, and its influences were now more or less felt throughout the wide range of our colonial empire, and by every nation of the civilized world. Mr. B. adverted to the advantages which had resulted from association to commerce, literature and art, and to all the varied appliances of a higher civilization; observing that Providence had remarkably favored this portion of the world in its agricultural and commercial capabilities, and that we inherited the same blood and indomitable energy, which had given to our father-land such an enviable distinction among the nations of the earth.

He had received from distinguished agriculturists, both at Home and in the United States, honorable and encouraging testimony to the value and interest attached to the proceedings of the few Farmers' Clubs that are already in existence in Canada. Agriculture in this country presented a field for practical and scientific culture that is constantly enlarging, and demanded the best powers of both mind and body. The Professor concluded by offering a number of practical suggestions relative to the organization and management of Farmers' Clubs, and mentioned several subjects that might be advantageously discussed at such meetings, in the present state and wants of the country.

After some observations from Messrs. Bull, Snider, Lee, Ross, Powell, and others, it was Resolved,

1st. That a Farmers' Club be Established in the Township of York of which all members of the County and Township Agricultural Societies shall be members.

2d. That the object of the Club shall be to meet from time to time for the discussion of subjects connected with the interests of agriculture; That some member shall prepare and read a paper on a subject agreed upon at the previous meeting, taking care to give full references in all cases of quotations from books or other authorities.

The meetings are to be held monthly in different parts of the Township; political and theological subjects are to be excluded, and any member will be at liberty to take part in the discussion.

The following Officers were appointed:—

E. W. THOMSON, President.  
J. P. BULL and W. LEE, Vice-Presidents.  
W. JACKES, Secretary.  
J. ROSS, Treasurer.

*Committee:*

J. DEW, J. McMULLEN,  
H. JOHNSTONE, T. HALLEY,  
T. L. HALLOWELL.

The officers are to prepare a set of rules and regulations in accordance with the spirit of the above resolutions, and present them to the next meeting of members, at Powell's Inn, on Yonge Street, the second Wednesday in March, at six o'clock,—when Professor Buckland has engaged to deliver an address on *The Relations of Science to Practical Agriculture*.

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Some such peculiarities as the year 1854 possesses, will not occur again for twenty-eight years. The year begins and ends on Sunday; there are five months in the year that contain five Sundays, and there are fifty-three Sundays in the year.

TOWNSHIP OF HAMILTON FARMERS' CLUB.

FARM YARD MANURE.

At the meeting of the Township of Hamilton Farmers' Club, held at Dickson's Inn Court House, on Saturday, December 31st, 1853.

Mr. John Masson in the chair.

Present—Messrs. P. R. Wright, J. Wade, D. Black, G. Black, Ingerstol, Beatty, Pratt, Brown, Roddick, Sutherland, Bennett, Forsyth, &c., &c., &c.

The subject for discussion, viz., "The Management and Application of Farmyard Manure," was introduced to the meeting by P. R. Wright, Esq., as follows:

At a meeting such as this, composed almost entirely of practical farmers, it would be useless to allude to the importance of the subject on which I am privileged to make a few introductory remarks, and chiefly with the view of directing your attention to certain points profitable for consideration and discussion. We have all more or less practical experience, therefore the conversation may be expected to be general, and consequently my remarks shall be as brief as possible. The term manure was at one time chiefly confined to the excrements of animals, either mixed or unmixed with the straw of cultivated plants, but it has now attained a much wider signification, and includes every substance of an animal, vegetable, or mineral origin, which, when applied to the soil, has the effect of increasing its fertility. In practical agriculture manures are divided into two classes, natural, and artificial, the former derived from the soil itself in the various forms of the straw of cereals and grasses, roots, grains and so on, all of which being consumed by cattle of some kind or other, in fields, stalls, or straw-yards, yield that much prized substance, familiarly known as farm yard manure, the management and application of which, we meet this day to consider. The management of manure may be said, without exaggeration, to be the most important department of farm practice; and unfortunately one on which there is greater need for improvement than on any other, and notwithstanding the fact that the proper management of the dung heaps has been explained, and enforced by the teachings of agricultural chemistry for the last ten years; the practical application of the lessons remains yet in a great measure to be made. Farm yard dung still continues to be carried out from rain-soaked straw yards to the fields, and there deposited in heaps exposed to rain, wind, and sun, for weeks or months, without an attempt to stay the waste that must evidently arise from exposure, and very many farmers whose practice in other matters is unexceptionable, are strangely blinded to the great loss sustained by exposed manure heaps. On nine-tenths of the farms in Canada, even in districts where good manage-

ment generally obtains, there is a fearful waste of food producing material, and to this state of things badly constructed homesteads have greatly contributed, and even now in the construction of new buildings we seldom or ever see any attention paid to, or provision made, for the preservation of liquid manure, or for protecting the straw yard from being deluged every now and then by rain poured into it from the surrounding roofs. I would except, however, certain cases, when with wonderful ingenuity and engineering skill a site has been chosen on the highest peak of the farm, that the owner may enjoy the felicity of a dry straw yard! A loss of manure is equivalent to a diminution of produce, and this again by lowering the profits of farming necessarily depreciates the value of land; and in the construction of new buildings or repairing old ones, abundant provision ought to be made for the complete preservation and protection of manure—all manure ought to be made under cover, either in stalls, boxes, or sheds, if in the former it must be removed daily, which entails the necessity of a shed for its protection, if in the second it may be allowed to accumulate for some time, and by the latter mode it may be allowed to remain, until required for laying on the land, provided the roof of the shed will allow its being so accumulated. How is it we invariably find box feeding or stall feeding of some kind or other accompanied by bulky crops of grain, roots, and clover? Just because the manure so made is richer and more abundant than on those farms where the creek, ditch, or pond, receives the drainage of the strawyard—few who have not studied this subject are aware of the enormous quantity of fertilizing materials that accompanies the little black stream which oozes from the yard where no tank is provided to draw off the surplus liquid. The general practice of throwing the manure from the stable into the yard, in one point may not be objectionable, as loose cattle are fond of picking stable litter and thrive well on the refuse fodder; but the advantage thus gained would be greatly enhanced if the dung were placed under cover, and the expense of erecting sheds for this purpose would be amply repaid in a few years by the superior condition of the cattle, and the improvement of the manure. Where timber is both cheap and abundant it is astonishing to see the number of farms, where the only shelter to be found is the precarious and doubtful one, the lythe side of a zigzag fence. Having condemned the practice of laying down the manure in the field, I may be permitted to suggest a more rational plan. Choose the least exposed portion of the field (consistent with a due regard to economy of time) for forming the heap, give it solidity sufficient to prevent violent fermentation, which to a certain degree is necessary, that the vitality of noxious seeds may be destroyed, cover the whole pile with earth six inches thick, and it is then in the safest state circumstances will permit. Having said thus much on the manufacture and management of manure, the next point for consideration is the principle which should govern its application, and first generally; It may be regarded as an axiom which holds good everywhere, and in all cases,



that the quicker farm yard manure is buried, the better, because when once covered up with three or four inches of earth there is no risk of its being lost, as the soil, (according to Way's experiments,) has both a physical and chemical power of retaining ammonia, while at the same time it yields it up readily to the growing plants. The wasteful practice of spreading manure on the surface, or laying it down in small heaps to lie bleaching in the sun for weeks before being ploughed in, is not less absurd than the Syrian practice of making the dung of animals into cakes and sticking them on the walls of their houses to dry in the sun preparatory to their final destination of being burned as fuel! A farmer who imports his ammonia from the Chinese Islands, and dissipates to the four winds of Heaven that furnished by his own farm, is nearly as wasteful as if he gave away his straw for nothing and purchased what he required for his own use. If we lend our ear to science she will inform us that under exposure decomposition takes place, that the consequence is the liberation of that gas, (ammonia,) the essential spirit and vital agent in the production of our green and grain crops, from the body which we have been at the expense of collecting together, then *truly a body whose spirit hath departed*.

Professor Johnston, on the application of manure says, 'that when recent manure from a given quantity of straw is ploughed in, the greater the quantity of organic matter we add to the land when the only object thereof is the general enriching of the soil, this is the most expedient and economical way of using the manure, but when the soil is light and open, recent manure when ploughed in has a tendency to make it still more so, and may thus mechanically injure its condition; in such a case it may be better to allow the manure to ferment and consolidate in the barn yard with the certainty of considerable loss, than to diminish the solidity of the land by ploughing it, in a recent state, the question for the practical man to decide is whether it would not be better generally to keep his manure in heaps till it is well fermented, and adopt those measures for preventing waste in the heaps which science points out. Whilst those evils may arise from the use of long dung on light soils—it is very different on clay or heavy land, this sort of soil will evidently be benefitted by the opening tendency of unrotted straw, while at the same time the products of decomposition will be more completely retained, the soil more enriched and the crops following more benefitted. On clay soil an excellent practice is to plough in the recent manure in the fall which will then reach its most fertilizing condition when the early spring causes the young plants to seek further supplies of food; the nature of the crops sought to be raised must guide the practical man in applying the manure, as well the nature of the soil; if the crop is one which springs up rapidly and attains an early maturity, he will apply the dung in an advanced state of fermentation and thus immediately benefit the growing plants, in this state it is generally considered best for turnips, and at least one important object is gained by it: forcing the young plant during the time it is tortured by

the fly, and also furnishing such supply of food as keep them growing till they have attained a profitable size. I must apologise for the length to which these remarks have extended, the subject is so fertile and all important to us as farmers, that I rest sure of your forgiveness, and I trust the practical remarks which follow may be heard with due attention, and be productive of much good.

Mr. J. WADE said, there is a good deal of difference between this country and England in the application of manure, they could use it as a top dressing to greater advantage in the moist climate of England than we could do here in our dry climate.

There has been a good deal said about the advantage of putting manure under shelter, it was said by some to increase its value as much as twenty-five per cent; he had never tried keeping his manure under shelter yet; he had read lately an experiment made by a tenant farmer in England who had tried manure made under shelter and that made in the usual way, and had found but very little difference. It depended on what crop he wished to apply his manure as to how he prepared it, if it were not for the seeds of weeds, he would prefer applying his manure unfermented; he had been in the habit of applying the greater part to summer fallows; he generally applied from the barn yard just as it was (unturned) before the second ploughing, so that any seeds that were among it would vegetate and be destroyed by the plough. On the other hand if you wished to apply manure to green crops it ought to be put in a heap and fermented, as manure ought to be partly pulverized for green crops; he had often applied manure to turnips without turning, and with good success, but took care to take the shortest, that with least straw in it, for should it come a dry summer turnips would not do well on unfermented manure.

Mr. Wm. RODDICK said, his general practice was to draw out all his dung in the fall for green crops, as he seldom summer fallowed any; he never turned his dung as he thought it was a great waste of manure to turn it, he threw up the manure round the sides of the yard where it was thin and allowed it to lie all summer in the barn yard; he had eave-troughs round his barn and sheds, which prevented the wash from running off them on the dung; he preferred manuring in fall to the spring, he sometimes put a little dung in the drill for his turnips in addition to what he gave the ground in the fall.

Mr. BENNETT said, he was not much of a farmer, but as the chairman had desired him he would state how he had manured his carrot ground, (Mr. B's carrots received the first premium last fall); his yard was small so that he had to throw his dung out and put it in heaps. The ground had been in potatoes the previous year, and he put the manure on after he had taken off the potatoes, and ploughed it down immediately. He thought that manure ought to be ploughed under almost as fast as it was taken out, as when manure was allowed to lie on the land in the sun for perhaps a week or two it was of very little

use ; he thought that there was a great deal of manure wasted from the way in which many barn yards were constructed, allowing the liquid part to run to waste ; if farmers were to make their barn yards hollow in the middle, so as to save as much of the liquid portion of the manure as possible, or if they would go to the expense of a tank, it would be a great benefit to them.

Mr. D. BLACK said, he applied his manure in the fall for root and green crops, except for turnips ; for turnips he would prefer manure just rank from the barn yard and put in the drill before sowing, as he thought it did as well for turnips that way as when turned and fermented ; he thought manure was best made under a shed to prevent it from exposure to the weather ; for summer fallows he would put it on before the second ploughing ; he would like it fermented to destroy the seeds of weeds before putting it on summer fallow.

Mr. SUTHERLAND agreed generally with Mr. Wright's remarks in the comprehensive and excellent speech he had heard read ; his impression was, that the greater portion of the best of the manure made on the farm was wasted by negligence and the improper construction of our barn yards ; he had reference more particularly to the liquid portion of the manure, which was in most cases allowed to run to waste, and was leached out of the solid manure by the volumes of water allowed to pour down upon it from the adjoining buildings, when a trifling expense for eave troughs to carry off the water would remedy this evil ; his idea of a farm-yard would be, to have it so constructed that all the liquid portion from the different stables would converge to one point and be received into a tank or cess pool, in this state it might be employed as a fertilizer in its liquid state, or amalgamated with the solid portion of the manure by the various modes adopted for the purpose. He thought the less the solid portion of the manure was turned before putting on the land the better, except for root crops ; his mode of doing was to draw it out of the yard after the spring work was done, and convey it to the field it was intended to be used on ; by this means he saved the turning of it in the yard.

Mr. PRATT said, he generally put on his dung in the Fall ; he turned over his dung in the barn-yard in the summer and let it rot ; he did not approve of turning dung, but could not help it as he thought there was no other way to destroy the seed of weeds that were in it. For turnips he preferred well rotted dung and plenty of it in the drill before sowing.

Mr. GEORGE BLACK thought that dung would be the better of being made under cover. If all the water that runs from the roof of the barn and sheds was prevented from running on the manure it would be much better, as so much water running through the manure took a great deal of strength out of it, he thought it would answer best to have a place puddled solid in the middle of the barn-yard, and small drains to run from each of the stables to carry off the liquid into this hollow place, so that none of it might run to waste. He had seen at home where they drew out their dung in large heaps in the field ; they laid down just

about two feet of earth and then drew out as much dung as they thought sufficient for the field, and then covered the heap with earth, then pumped the tanks over this heap, and then a short time (say three weeks) before they wanted to use this manure, they would turn it all over and apply it to their potatoes, turnips, and other green crops. For wheat on clay soils, he would apply dung rank from the barn-yard at the second ploughing, as it tended to keep such land open, but to light land for wheat, he would apply well rotted dung ; he had never had a good crop of barley after wheat, nor ever seen one : he thought there must be something in the roots or stubble of the wheat that did not agree with the barley. Manure for turnips he would like well heated, and put it smoking hot out of the dung heap into the drill, cover and sow immediately, and there was little danger but you would have a good crop of turnips. He would rather have one ton of liquid manure than ten tons of barn-yard manure as it is usually made ; he had found turnips as good after liquid manure as after either bone dust or fish oil on the same land. In drawing dung out in large heaps in the field, it ought either to be covered up with earth or trodden down solid to prevent it from over heating.

Mr. MASSON always found his barley do well after wheat, if he ploughed his wheat stubble early in the Fall ; he would never put manure on summer fallow, but reserve it for his barley crop ; he laid it on in the Fall and ploughed it down with the wheat stubble in this way ; he had good crops of barley, and his young clover always took and did well in this way. With regard to making manure, since he had been farming near Cobourg, he had always had most of his cattle tied up, and he found the manure made from them better than that made in the usual way of the cattle running loose in the barn-yard. He would like his barn-yard with a basin in the middle, and fill this basin each season with earth, taking care when he turned his dung to shovel up this earth amongst it ; he would turn all his dung as early as possible in the spring and then draw it out for his green crops, taking care to mix the wet and the dry well together ; he thought that if dung was very hot when put on for turnips it would dry up before it could be covered in ; he liked it as damp and as fine as possible.

A vote of thanks was given to Mr. Wright for his excellent Essay.

The next meeting of the Club was appointed to be held at Dixon's Inn, on the last Saturday of January, at one o'clock.

The subject for discussion to be draining. Mr. George Black to introduce the subject.

WALTER RIDDELL, *Secretary.*

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TO TRY OUT BEESWAX.—Put the comb into a colander, or a tin pan with the bottom punched full of holes, and place it in a warm oven over another pan partly filled with water. The wax will melt and drop into the water below, perfectly clear.



**DELAWARE AND CARRADOC TOWNSHIP SOCIETY.**

At the Annual Meeting of the Directors and Members of the Branch Agricultural Society of the Townships of Delaware and Carradoc, advertised to be held in the Town Hall in Delaware, but adjourned to A. Montgomery's Hotel, on the 21st day of January, 1854. The following office-bearers were elected for the ensuing year:—

Wm. Livingstone, Esq., President, H. Johnstone, Esq., Vice-President, Horatio Jell, Secretary, and Dr. Francis, Treasurer.

The following gentlemen were elected to act as Directors, viz:—Major Heyne, Wm. F. Bullen, Jno. Johnstone, J. B. Burwell, Geo. Uxford, G. Gownlock, G. McKay, B. F. Bartlett, J. Tull.

The Annual Report of the office-bearers and directors of the Society for the past year, was then submitted to the meeting, together with these few remarks.

"It is with great satisfaction that we, the Office Bearers and Directors of the Society, submit a few remarks on the very evident improvement both Agricultural and Commercial, in the Townships of Delaware and Carradoc during the past year. Certainly the Agriculturists in both Townships have nothing to complain of, on the score of want of fertility of soil, it is notwithstanding of a very varied description. In the south-east part of Delaware and South part of Carradoc, it is principally a clay loam, and well adapted for Wheat; the "Flats" on the banks of the river Thames (which divides the two Townships) are assuredly of a very superior description of soil, although not so well adapted to the growth of wheat, the soil being a deep vegetable mould, yet they are not to be surpassed in the production of hay or root crops; in the north-west part of Delaware, and more particularly in the north part of Carradoc, the soil is generally a sandy loam, and with good management is made to produce excellent crops of wheat.

We may here remark, that it is most gratifying to us to observe the increased attention paid to the cultivation of roots in both Townships, and which are of such essential benefit, in the well-wintering of stock, in almost every country, more particularly in this; and we must own that within the last few years, the farmers here have advanced greatly in their entire system of culture, and the present high prices, will no doubt have the effect of stimulating the farmer to much more strenuous exertions to till his land properly.

The crops in this section of the country were, on the whole, taking into consideration the extraordinary dry season, *good*, the fall wheat crop was considerably above an average one, but the spring crops were rather below.

The Great Western Railway being now in operation, and passing directly through the township of Carradoc, is of the greatest advantage to the farmer, in affording him by the facility of transit, good markets for all kinds of produce, and equalising the prices thereof more in unison with those of the markets in

Toronto and Hamilton. Even the construction of the line, was the means of benefitting the community at large, by causing a great circulation of money, and giving an impetus to trade generally.

The roads in both townships are gradually undergoing a thorough revision, by macadamising where practicable, and otherwise repairing others, and there seems to be an unanimity in the desire of all parties for improvement.

Property in and around the village of Delaware has within the last year, risen in value to a great extent, it certainly has as great advantages if not greater, than any other village or town in the Upper Province, in point of water privileges, and when the projected canal is completed (which will be the means of diverting the course of the river Thames, and causing it to flow through the village of Delaware, thus obtaining a great fall of a large body of water, capable of propelling machinery to almost an indefinite extent) the village, which has so long lain dormant, may then raise its head above any other manufacturing town in Canada West."

After passing a few resolutions relative to the affairs of the Society, a vote of thanks was then passed by the meeting, to the Office-bearers and Directors of the Society, for the able, energetic manner in which they performed their respective duties during the past year.

HORATIO JELL, *Secretary.*

**BLenheim AGRICULTURAL SOCIETY.**

We have to record the proceedings of a meeting held at Drumbo, in the township of Blenheim, on Saturday the 21st of January, for the purpose of organizing a Branch Society, which was duly effected upon that occasion. JAMES WATSON, Esq., being called to the chair, explained the object for which they were met—and observed that it was gratifying to watch the progress of this young country. He would say, he was happy he had cast his lot in what will soon be considered one of the finest farming districts on this Continent. But a few years ago Canada was only known as a wilderness, furnishing timber for European Markets; at the present moment, we transmit annually, several hundred thousand barrels of flour and other products and with our present prospect of railroads, and other improvements, we shall soon be classed amongst the most important of the British possessions. He had long been desiring that such a society should be established in Blenheim, and would call on Mr. Alexander to explain more fully than he could do, the benefit it would be to the township.

Mr. ALEXANDER would have regretted much had he been prevented by other engagements, from being there-to-day. All present would heartily concur with their respected Chairman in this, that while the markets for produce were becoming better, and the value of property rising everywhere, it would be desirable that all those means of further improvement should be adopted which had raised older countries to wealth and greatness. As the interests of this Province were essentially Agricultural, they had to study how the Farmer may become enriched, not only by the more successful cultivation of the soil, but by raising stock of the most valuable kind. Mr. Alexander here proceeded to illustrate, at considerable length, the good which had been done by Agricultural Societies in Scotland. He remarked, that no one could visit the meetings of the Highland Agricultural Society, and witness the beautiful stock exhibited there, without feeling that some powerful agent had been employed to bring about such results; not to mention the numberless ingenious implements of husbandry, constructed to save labour, and to enable the farmer to do his work in a more efficient manner. In a new country, such as this, where the scarcity of labour is the great difficulty, our Agricultural Societies would do well to study how they can best encourage all such improvements, not overlooking the importance of bringing into the country the new kinds of seed, some of which may be well adapted to our climate and prove a more certain crop. But the amount of good done by such societies, will depend upon the care which is taken to conduct all the proceedings, so as to preserve confidence in their management. No one should accept office who is not resolved to give much time and attention, to see that the By-Laws and regulations are well considered; to see that competent judges, from some other locality are secured, whose decisions will give general satisfaction. Properly speaking, the officers of the society should divide the labour of management, each undertaking to do his part *thoroughly*, that nothing may be neglected. All using their influence in their respective localities to increase the number of members. The arrangements for the annual show to be made in due time; and upon that day, every officer should have his post assigned to him, and in all cases where any dis-satisfaction is expressed with the decision of the Judges, or any other thing, there should be an investigation of the matter at the time, so that confidence may be maintained in the management. Then, as to the manner of disposing of the funds of the society, the amount of the premiums to be awarded, and whether thorough-bred stock should be purchased, these are all questions requiring judgement, and a practical knowledge of the wants of the locality.

In conclusion, he rejoiced at the occasion of their meeting here to-day. The township of Blenheim, with its rich natural resources, its unlimited water-power, and two railroads traversing its territory, must increase rapidly in wealth and population—and by continuing to give a liberal support to the cause of Educational and Agricultural improvement, you will most effectually be

laying the foundation of a solid and permanent prosperity.

The Chairman observed, that it now devolved upon the meeting to elect their officers for the present year, according to the provisions of the Statute, when the following gentlemen were unanimously appointed:—

JAMES WATSON, *President*.

HUGH ALLAN, *Vice-President*.

WILLIAM DICKSON, *Sec. & Treas.*

**DIRECTORS.**—John S. Lindsay; Francis Pickle; William Brown; Edward Bouchier; Walter; Martin; Andrew Laidlaw; Archibald McArthur; Christian Stauffa; Daniel Wakefield.

After a vote of thanks to the Chairman and Mr. Alexander, the meeting adjourned.

#### ETOBICOKE AGRICULTURAL SOCIETY.

*To the Editor of the Canadian Agriculturist:*

SIR—The annual meeting for the election of officers and directors of the Township of Etobicoke Agricultural Society took place on Wednesday, January 18, at Mr. Thomas Smith's Inn, Mimico, when the following gentlemen were unanimously elected to office for the current year:—

*President*—Edward Musson, Esq.

*Vice-President*—Donald McFarlane, Esq.

*Secretary*—Andrew Ward, Esq.

*Treasurer*—Edwin C. Fisher, Esq.

*Directors*—Messrs. Wm. Wilson, Reuben Fearnley, Thomas Mercer, Archibald Cameron, William Mead, John Moore, William R. Scott, Benjamin Johnston, Archibald Gallanough.

The meeting was large, being numerously attended by parties interested from all parts of the Township, which was highly gratifying to witness, showing that the farmers generally are becoming alive to their own interest, and are determined, henceforth, to put their shoulders to the wheel, to assist in advancing the cause of agriculture by liberally supporting Township Agricultural Societies, which of late have so clearly proved to be beneficial, not only to the Townships where they originate but to the Province generally.

A. WARD, *Secretary*.

#### PETERBORO' AGRICULTURAL SOCIETY.

The Annual Meeting of the County of Peterboro' Agricultural Society, was held at the Court House on Saturday, the 4th ultimo, when the following gentlemen were elected Officers for the ensuing year:

*President*—Mr. John Harvey.

*Vice Presidents*—Messrs. I. Garbutt and T. Bell;

*Treasurer*—Mr. R. Nicholas.

*Secretary*—Mr. J. W. Gilmour.

*Directors*—Messrs. John R. Milburn, John T. Milburn, Emanuel Mann, Christopher Burton, William Simpson, Joseph Walton, Isaac Milburn.

It would appear from the Report, which was read and adopted, that the funds of the Society are in a prosperous condition, there being a balance on hand of over £40. The Report also mentions the purchase of a quantity of Plaster, now ready for delivery at Port Hope, upon presentation of orders from the Secretary, which can be had on application to the Treasurer of the Society.



## Communications..

### ON THE MODERN SYSTEM OF DRAINAGE, AND ITS APPLICATION IN CANADA.

(For the Canadian Agriculturist.)

As in every other productive art, so in Agriculture, its progress, from primitive simplicity, to scientific cultivation, is the inevitable consequence of enlarged demand on the one hand, and increased competition on the other. The earlier or later development of the result may of course be affected by various circumstances—social, political, or geographical—but it is sure to follow: in Holland and the Low Countries, for example, these causes combined to render them at a comparatively early period, the best cultivated districts of Europe; whilst Great Britain, so long in a transition state, has at length entered in earnest on the great work of Agricultural improvement. France, Russia, and other parts of the Continent are still content to toil on in all the apathy of pastoral primitiveness; although, in the former country, there have of late been indications of a conscious necessity for Agricultural progression, and it is more than probable that the recent internal changes, coupled with the effect of passing events, will stimulate a rapid advance in its rural economy.

Now as introducing to our subject, and as affording matter for reflection, as well as examples to be profitably followed and avoided, it may not be altogether uninteresting to trace briefly the progressive condition of Agriculture in the Mother Country, during the past half of the century. And if, in so doing, we should recall to mind those halcyon days when, with wheat at 15s. per bushel, the toast of "better times" was the cherished sentiment of the market tables, it will be assuredly with no longings after the evils happily passed, and of which, even to this hour, we, in common no doubt with many, retain familiar recollections; for it was our lot to be born under a Vicarial Roof, in a midland county, and so in early life to witness and to feel those exemplary contrivances, for the elongation of incomes, which the necessities of the times established as fashionable, in order to their being admissible. The great feature of advance which characterised the first quarter of the century, was the inclosure of open commons, and uncultivated lands; than which nothing could more distinctively mark the desire to reap the more easily producible and abundant crops of a virgin soil, than attempt a systematic increase of the comparatively costly and precarious yield of the old-going lands. From the year 1800 to 1825, there were no fewer than 181 Acts of Parliament passed for Inclosures, comprising a total area of 3,400,000 acres, which were either fully or in part brought into increased productiveness. And yet it may be questioned

how far the general amount of available produce was augmented by these means; and whether, in fact, they did not actually promote the neglect of the old inclosed lands, as well as conduce to a

considerable extent of the inferior soils being laid down most imperfectly and unprofitably into grass.

As an element which is supposed to materially affect the advance of cultivation, let us at this stage take a glance at the statistics of the prices of Agricultural produce, during the period under review, in order to form some definite idea of the influence which from time to time they practically exercised.

|                                                  |          |           |
|--------------------------------------------------|----------|-----------|
| From 1800 to 1810 the average price of wheat was | 84s 8d   | per qr.   |
| do 1810 to 1820                                  | do do do | 91s 4d do |
| do 1820 to 1830                                  | do do do | 59s 9d do |
| do 1830 to 1840                                  | do do do | 56s 8d do |
| do 1840 to 1850                                  | do do do | 55s 11 do |

|                                                 |               |
|-------------------------------------------------|---------------|
| The 1st period, the highest price was, in 1801— | 119s 6d       |
| do do do lowest do do                           | 1803— 58s 10d |

|                                                 |              |
|-------------------------------------------------|--------------|
| Difference.....                                 | 60s 8d       |
| The 2nd period, the highest price was, in 1812— | 126s 6d      |
| do do do lowest do do                           | 1815— 65s 7d |

|                                                |              |
|------------------------------------------------|--------------|
| Difference.....                                | 60s 11d      |
| The 3rd period, the highest price was in 1825— | 68s 6d       |
| do do do lowest do do                          | 1822— 44s 7d |

|                                                 |              |
|-------------------------------------------------|--------------|
| Difference.....                                 | 23s 11d      |
| The 4th period, the highest price was, in 1839— | 70s 5d       |
| do do do lowest do do                           | 1835— 39s 4d |

|                                                 |              |
|-------------------------------------------------|--------------|
| Difference.....                                 | 31s 1d       |
| The 5th period, the highest price was, in 1847— | 69s 9d       |
| do do do lowest do do                           | 1849— 44s 3d |

|                 |        |
|-----------------|--------|
| Difference..... | 25s 6d |
|-----------------|--------|

The first noticeable feature is the ruinous depression of 1803, and again in 1815, both occasioned by the transition from war to peace, and both alike producing serious consequences. It is curious to observe how very nearly the percentage of depression was the same in both instances. In the three successive years of 1821, '22 and '23, comparatively low prices prevailed; so also in 1834, '35 and '36, the result for the most part of favorable harvests. In 1835, the price of wheat was as low in England as ever it has been since. If the higher range of prices was conducive, as some have contended, to improved cultivation, its manifestation was of so indefinite and partial a character, as hardly to assume any perceptible form. Isolated instances certainly were not wanting of tracts of land rendered productive by improved management, which heretofore had been of little or no value: the Counties of York, Lincoln and Norfolk afforded some memorable examples—nevertheless there was not, prior to 1821 (when lower prices set in) such an aggregate desire for advance, as would indubitably have left behind it some more indelible evidence, had the opinion been correct that high prices ensure improved cultivation.—In some justification, however, of what at first sight seems paradoxical, it must be borne in mind that in Great Britain, there were, till recently, other causes which interposed barriers to improvement, that no prices of produce, however high, could counterbalance; and, as the chief of these, may be mentioned the law of entail and settlement, whereby life owners and life tenants—some from prudential considerations, and others from necessity—were ever discouraged from laying out money in improving property which must descend perhaps to an already wealthy heir-at-law, to the prejudice of all the junior members of the family. In Scotland, where more than

three fourths of the entire area is under strict entail and settlement, the evil was felt to be so serious that an Act of Parliament, entitled "The Montgomery Act," was many years ago obtained, enabling life owners of estates to lay out money in permanent improvements, and make it a mortgage charge upon the inheritance. It is to this Act that Scotland mainly owes the high agricultural position she has attained; and it is not a little strange that, seeing the benefits tangibly exemplified, England should have been content to remain so long under the disabilities, without an effort to obtain the same facilities; for it was not till the Session of 1842, that Mr. Pusey's first Act for the Drainage of entailed and settled estates, in England, was passed.

What high prices failed to promote, in any prominent or effective degree, lower rates have as invariably necessitated: for to the great body of "fruges consumere nati" it matters little what the prevailing influence be, so the essential object, of food at reasonable prices, be obtained. Now the use of bones as a fertilizer, is one of those practices, the introduction of which is a landmark in the history of English Agriculture, and is singularly concurrent with improved culture, based, as its adoption was, on sound chemical deductions. And not only so, but, curiously enough, by comparing the declared value of bones imported into the United Kingdom, with the average price of wheat in the respective years, it will be seen that their increased use was during, or immediately following, the successive periods of depression in the value of produce:—

|                                 |         |
|---------------------------------|---------|
| In 1821 the value of bones was  | £15,893 |
| 1824 it increased to.....       | 43,944  |
| 1827 it was.....                | 77,956  |
| 1830 it declined to.....        | 58,223  |
| 1833 it advanced to.....        | 97,900  |
| 1834 it again advanced to...    | 127,131 |
| 1836 it was.....                | 171,806 |
| and in 1837 it had reached..... | 254,600 |

Thus the use of this manure commenced with the low prices of 1821, '22 and '23; it decreased considerably under the higher averages of 1828, '29 and '30; and again pressed into the field, by the low rates of 1834, '36 and '36. Its importation became a settled and greatly extended traffic, which has gone on increasing ever since.—Guano was introduced at a later period, and will alike justify the same conclusions. It also forms a prominent datum of Agricultural progression.

It may be readily inferred that the extension of mechanical appliances, to the various operations of the farm, was, in a great measure influenced by the same causes which tended to the use of artificial tillages; and that their more general application and usefulness were secured by slow and gradual steps, as examples of their efficiency and economy, were from time to time afforded by those whose energy and intelligence led them to incur the risk of trial. These examples produced their fruit, and in due time Thrashing Machines, fixed and portable; Seed Drills; Straw Cutters; Cultivators; Horse Hoes; Improved Ploughs; and finally fixed and portable Steam Engines: Drain Tile and Pipe Machines, &c., &c., made their appearance, and are realising all the advantages that were anticipated.—

The Royal Agricultural Society of England was established in 1838, and held its first Annual Exhibition of Implements, Cattle, &c., at Oxford, the following year: and since there is, perhaps, no more certain indicator of the progress of Agricultural Mechanics, than the Meetings of this Society afford, we will give the number of implements entered and exhibited at each successive show:—

*Entries of Implements and Machines:*

|                                    |             |
|------------------------------------|-------------|
| In 1839 at Oxford, there were      | 23 entries. |
| 1840 at Cambridge.....             | 36 do       |
| 1841 at Liverpool.....             | 312 do      |
| 1842 at Bristol.....               | 455 do      |
| 1843 at Derby.....                 | 508 do      |
| 1844 at Southampton.....           | 948 do      |
| 1845 at Shrewsbury.....            | 942 do      |
| 1846 at Newcastle.....             | 735 do      |
| 1 47 at Northampton.....           | 1321 do     |
| 1848 at York.....                  | 1508 do     |
| 1849 at Norwich.....               | 1976 do     |
| 1850 at Exeter.....                | 1202 do     |
| 61 merged in the Great Exhibition. |             |

As showing, at the same time, the increasing anxiety of the landowners to commence *their* part of the great work, in a primary improvement of the strong and wet lands of the country, it may be noticed that no machine for Drainage purposes, or the manufacture of the materials for drainage, was exhibited till 1843, when two were shown, from which time they gradually augmented to 17, as the largest number. By these machines the cost of Drainage work has not only been reduced one half, but its extension has been rendered effective and durable; and when we assert that no single machine was ever introduced into Agricultural operations, which has produced the same extent of beneficial results in so short a time, we do not exceed the truth, or do more than common justice to the patriotic intelligence of those who have appreciated and applied them. Speaking of Drainage in his deservedly popular article, "*On the progress of Agricultural knowledge during the last eight years*," Mr. Pusey remarks, "Drainage, at whatever depth, for some years known to be profitable, is now indispensable, being only checked by want of means; and it is well that the cost of materials is so greatly reduced by Tile-machines, which can deliver their goods like the new printing-press of the *Times*, at a score in a minute—that instead of paying, as I have done, 90s. per 1,000 feet, we now get pipes at 15s.—one-sixth of the former rate."

With the single exception, perhaps, of Railways, there is no operation which has received a greater share of public attention, or been more thoroughly and ably handled, than that of Drainage. It is now about ten years since its great practical advocate, the late lamented Mr. Smith, of Deanston, infused new life and impetus into the subject, by recording his own experiments, and giving directions for the better performance of the work. He was soon afterwards induced to co-operate with the writer, and others interested in the subject, in an endeavor to establish a Public Company, with fitting legislative provisions, for the Drainage of lands; and it was from

\* Journal of Royal Agricultural Society of England, No. 26, for 1850, page 402.



the various exertions made on that occasion, in directing general attention to the attempt, and by calling the special attention of the Government to the present necessities of the landed interest, that Sir Robert Peel was induced, on the repeal of the Corn Laws, to pass an Act for the Drainage, in a permanent and efficient manner, of estates, with a grant of two millions sterling to be applied, by way of loan, to the purpose.—Under this Act, as some recognition of services in the cause, the writer was the first Assistant Commissioner that was appointed. This grant was soon appropriated, and subsequently a further grant of two millions was made, the whole of which also has been taken up. In the meantime two public companies—"The West of England Drainage Co.," and "The General Land-Drainage and Improvement Co.," were established with suitable powers and capitals; and a third Company, under influential auspices, is at this moment in the course of formation. The business of the two existing Companies has been very extensive and satisfactory to all parties; and in a subsequent No. we purpose, in the further prosecution of our subject, to speak more at length on their mode of conducting operations, and the benefits which have resulted, as perhaps suggesting matter worthy of consideration for Canadian capital and enterprise.

(To be Continued)

### ON THE EDUCATION OF YOUTH.

To the Editor of the *Agriculturist*.

DEAR SIR.—Doubtless most of your readers will agree with me when I assert, that the proper education of the young and rising generation is a matter of no small importance. It is to a great extent true, that "Just as the twig is bent the tree is inclined," or in other words "Train up a child in the way that he should go, and when he is old he will not depart from it." A proper education is of as great importance to farmers as to any class in the community. They are often said to be "the bone and sinew of the nation." The prosperity of every other class in the country is intimately connected with, and essentially depends on, the prosperity of the farmer. If the farmer's crops are good and prices remunerating, all the other classes of society partake of the benefit, and rejoice in the consolation. If, on the other hand, the farmer's prospects are gloomy, all trades and professions languish. If, therefore, the prosperity of the country depends on the prosperity of the agriculturist, it must be a matter of no small consequence, that farmers' sons be properly trained for their vocation; and not only farmers' sons, but their daughters too, in order that they may be, "help-meets" for their husbands, should have an education calculated to fit them for that important station in society which, in all probability, they will be called to occupy. I commenced this article with a design to offer a few remarks, by your permission, through the medium of the *Agriculturist*, on the education of farmers' daughters. In writing a few lines on the

proper training of this class of persons. Let it be distinctly understood, that my observations will be confined, almost exclusively, to such education as is calculated to promote the happiness of farmers' lives, and the usefulness and comfort of farmers' wives. About that kind of education which is thought to be suitable to the fashionables of towns and cities, I do not intend to write. The writer, in introducing himself to the acquaintance of your readers, would just state that his head is gray with age, and his hands hardened and caloused by the use of the axe, spade, flail, scythe, grain cradle, hoe, and plough-handles;—that he spent his youth in England, his manhood's prime in the United States of America, and is now bringing his years to a close in Western Canada: that he claims to be a little acquainted with the educational institutions of each of the above countries, and knows as much, perhaps, as a country farmer may be expected to know, how far those institutions are adapted to make good farmers and good mechanics, good husbands and good wives, good Christians and good citizens. I am now speaking of their common-schools;—with their higher educational establishments I am not familiar. Again, in treating on female education. I do not pretend to be able to write on the subject in a scholar-like, elaborate and critical manner. I can hope only to make a few common-sense remarks, such as might reasonably be expected of a homely country farmer, who has dedicated most of his days to the labors of the field.

I have now finished taking three volumes of the *Agriculturist*, and I do not recollect seeing more than a few short extracts on female education, and those extracts appear to me not to be suited exactly to the wives and daughters of farmers. A certain writer, whose communication is dated "Toronto, 23rd of March, 1848," and who signs himself "H." gives—in the *Agriculturist* for that year, page 68—an outline of what he conceives female education should be, and as the greater part of our present subscribers may not be in possession of that volume, I shall transcribe so much of the article as is suitable to my purpose.

"I would," says he, "give the pupil a thorough knowledge of the common English branches as the foundation of all solid learning. These are subjects in every-day life and must be learned. After these, or at the same time with them, the pupil ought to study general history, giving the outlines of the rise, progress and decay of the various nations, from the earliest antiquity, with the distinguished personages who have flourished in each, followed by the history of particular nations, and the history of the Jewish and Christian Churches. Bacon has remarked, that 'histories make men wise.' How many lessons of wisdom may be drawn from the history of the past? From the constant examples of the great, the wise, and the good, kept before the pupil, he is led sometimes, it may be unconsciously, to emulate them. By furnishing entertaining reading the mind is also guarded against that most fascinating and pernicious of all kinds of reading, *Novel reading*. Next may be introduced the natural

history of animals, from the insect, the object of microscopic vision, through all their gradations, giving an account of their appearances, number, habits, ages, &c. Geology, imparting a knowledge of the crust of the earth, with the various formations, changes, hills and valleys, rocks and mountains, rivers, lakes, and oceans, the changes of climate, fossil remains, &c. Chemistry, pointing to the ultimate elements of which all things are composed, and which regulate their composition and decomposition. Natural Philosophy, treating of the laws of motion and rest, in masses or bodies of matter. Astronomy, teaching the magnitude, motions, distances, periods of revolutions, and eclipses of the heavenly bodies,—unfolding to the mind the most stupendous works of God. Physiology, showing us the wonderful mechanism of our frames, with their organs, and the laws of health. Botany, giving a knowledge of the curious structure of plants, with their uses, and showing the wisdom and goodness displayed in their formation. The evidence of the truth of our holy religion. Intellectual and Moral Philosophy, treating of the powers and reflections of the mind, and showing our duties towards God and man." Excellent as the above outline may be, it is not well adapted, we think, to the daughters of farmers.

AN OLD FARMER.

Yarmouth, Jan. 20th, 1854.

*To be continued.*

#### ON FATTENING ANIMALS.

*To the Editor of the Canadian Agriculturist.*

DEAR SIR,—The insertion of the following remarks in your columns, would much oblige the writer.

Having, through a few years of observation, become cognizant to a certain degree, of the way in which animals are generally fed for the slaughter, and being led by these observations to the conclusion, that, in one or two points at least the farmer seriously neglects his own interests. I have thought that it might be advantageous to some to point out these errors, and to explain their detrimental mode of action.

The first to which I will allude, is the want of cleanliness and dryness; and this is more especially overlooked in the case of pigs, which are generally placed in very disadvantageous circumstances in this respect—so much so, indeed, that I am of opinion no small quantity of their food is, owing to neglect of this indication in the fattening process, completely wasted.

In order that the reason of this waste may be made palpable to all, it is necessary to state that the fat which is to be deposited in the interstices of the body of the animal, to render its meat marketable, is composed chiefly of hydrogen and carbon, the very elements which support almost entirely the animal temperature; and in the care of animals which are kept shut up, where the disintegration of the muscular structure is small, these elements must be derived directly from the

fatty deposit; so that anything which has a tendency to lower the temperature of the animal, must detract in a corresponding ratio from the fat, which is in this case taken up by the circulating blood,—conveyed by it to the lungs, and is thereby, being brought in contact with the inspired oxygen of the air, burnt off—by which means, as in ordinary combustion, heat is eliminated, and a mean temperature continually kept up, while the products of the combustion are expired in the form of carbonic acid gas, and watery vapor.

Now it is obvious from this, that if the animal be exposed to the keen blast of a wintry wind, the loss of heat by radiation must be great, and consequently the waste of food must be great also. But although from this cause (exposure) the principles of the economist must suffer great damage, yet there is another which far surpasses it in its injurious and wasteful tendency,—and this is, allowing animals to remain in a damp state, either by the non-removal of their own excrementitious matter, or by the non-prevention of the ingress of extraneous moisture upon them.

But it may be asked, "How does this moisture reduce the temperature?" It is thus:—

The animals lie down in a damp place, the animal heat warms the moisture in contact with them, and at this increased temperature it is turned into steam, it rises into the ambient atmosphere, a fresh modicum of water takes its place by the animal, and in a similar manner is also raised into steam. Now if water be at the temperature of  $212^{\circ}$ , in order that it may be turned into steam, it is necessary that it should first absorb a thousand degrees of heat, and this becoming latent in the water, imparts to it the property of elasticity,—in fact it becomes steam. But if the water is not so hot as  $212^{\circ}$ , more latent heat will be required to produce steam, and it is found that the quantity of latent heat is always in an inverse proportion to the sensible heat at which the steam was made; so that to produce steam at ordinary pressure of the atmosphere, the same quantity of heat is used whether the sensible heat be high or low.

What heat does thus exist in steam is easily proven, for it is only necessary to put a certain quantity of water, in a suitable vessel, upon a fire which is sufficiently hot to raise the temperature of the water one degree per minute; its temperature will continue to increase until  $212^{\circ}$  are obtained, then no matter how much the heat be augmented, the water will become no hotter; but it will be observed that after the lapse of a thousand minutes, all the water will be converted into steam; but one degree per minute must have been taken up by the water, and as its presence cannot be detected by a thermometer, it is but reasonable to suppose that it must exist in the steam, in a latent or hidden state; and other experiments indeed, fully demonstrate this to be the case—for example: if steam be suddenly condensed into water, a great quantity of heat is let free, sufficient, under favorable circumstances, to set fire to tinder or other easily ignited substances.



Now it must be strikingly apparent that if a thousand degrees of heat are continually being lost in this way, it must detract considerably from the substance which is used to keep up the temperature of the animal. And as this is fat, how great must be the loss to the farmer! who thus, for want of a few armfuls of dry straw, a good raised floor, and a light roof, throws away so much valuable grain (in food), for such waste-purposes.

Believe me, &c.,

IOTA.

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## Agriculture, &c.

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### THE THRIFTY FARMER.

The Provident and thrifty farmer, adopts three rules for regulating his business, which he observes himself and enforces on those around him, viz: to do everything in the right time, convert everything to its proper use, and put everything in its proper place.

He buys only the improved breeds of cattle, horses, sheep and swine, and keeps no more than he can keep well, either in summer or winter.

He always drives on his work and never lets his work drive him.

His animals are never under fed or over worked.

His outhouses, Wood-shed, Poultry-house, Pig-pen, Wagon-house, Spring-house, and Corn-crib are nicely white-washed on the outside, and kept clean and neat within.

He has a tool house, and a place for every tool in it, which may be wanted for any ordinary farm purposes, such as mending implements, making ax, or hoe or fork handles, &c., and also for storing carefully away, such as will not be wanted for another season.

He has sheds around his barnyard, to protect his cattle from the weather, and warm, ventilated stables for his cows and young stock, and also a shed, to protect his manure heap.

He has leaves or other refuse vegetable matter, to gather with soil from his headlands, convenient to his barn yard, to compost with his manure heap through the winter.

He does not allow the liquid manure to escape into the nearest stream, a quarter or half a mile from his barn yard.

His barn, and sheds, and dwellings are all supplied with good spouting.

His fences are always in good order, and materials for repairing or renewal, are collected and made during winter.

His woodshed is supplied with wood cut in August, always one year ahead.

His wife never scolds, because she never has occasion to.

Her cellar and pantry, are always supplied with the needful *raw material*, which she works up into a palatable form to fill up vacuums at meal times.

Heavy bread, cold buckwheat cakes, and rancid butter, are novelties which her gude man and the children have heard tell of by some of the neighbours, but have never seen.

He considers it a duty to promote the circulation of agricultural papers, and has saved himself some hundreds of dollars by following their advice.

His crops are always equal, and often better than any in the neighbourhood, and are kept clear of weeds.

He watches the market and sells his crops at the highest prices.

He makes it a rule always to spend a little less than he makes.

Himself and wife are both industrious, the children are brought up in the same way, and are not allowed to shoot the birds, smoke cigars, or chew tobacco.

He buys and sells on the cash principle, and thus saves himself from losses and bad debts.

He has a large fruit orchard, well supplied with every variety of fruit to ripen in succession.

He studies the *theory* as well as the practice of farming, has cleared off the last \$100 of mortgage, and is seriously talking of making a bid for his neighbour Sloven's farm which is up at Sheriff's sale.

He goes to church on the Sabbath, minds his religious duties, and brings up his children to do the same, lives respected, and dies regretted, as a useful man and good christian.

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### THE THRIFTLESS FARMER.

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The thriftless farmer provides no shelter for his cattle during the inclemency of the winter; but permits them to stand shivering by the side of a fence, or lie in the snow, as best suits them.

He throws their fodder on the ground, or in the mud, and not unfrequently in the highway; by which a large portion of it, and all the manure is wasted.

He grazes his meadows in fall and spring by which they are gradually exhausted and finally ruined.

His fences are old and poor—just such as to let his neighbour's cattle break into his field, and teach his own to be unruly and spoil his crops.

He neglects to keep the manure from around the sills of his barn—if he has one—by which they are prematurely rotted and his barn destroyed.

He tills, or skims over the surface of his land, until it is exhausted; but never thinks it worth while to manure or clover it. For the first, he has no time, and for the last he "is not able."

He has a place for nothing, and nothing in its place. He consequently wants a hoe or a rake, or a hammer, or an augur, but knows not where to find them, and thus loses much time.

He loiters away stormy days and evenings when he should be repairing his utensils, or improving his mind by reading useful books or newspapers.

He spends much time in town, at the corner of the street, or in the "rum holes," complaining of hard times, and goes home in the evening, "pretty well *tore*."

He has no shed for his fire wood—consequently his wife is out of humor, and his meals out of season.

He plants a few fruit trees, and his cattle forthwith destroy them. He “has no luck in raising fruit.

One half the little he raises is destroyed by his own or his neighbors’ cattle.

His plough, harrow and other implements, lie all winter in the field were last used: and just as he is getting in a hurry, the next season, his plough breaks because it was not housed and properly cared for.

Somebody’s hogs break in, and destroy his garden, because he had not stopped a hole in the fence, that he had been intending to stop for a week.

He is often in a great hurry, but will stop and talk as long as he can find any one to talk with.

He has, of course, little money; and when he must raise some to pay his taxes, &c., he raises it at a great sacrifice, in some way or other, by paying an enormous shave, or by selling his scanty crop when prices are low.

He is a year behind, instead of being a year ahead of his business—and always will be.

When he pays a debt, it is at the end of an execution; consequently his credit is at a low ebb.

He buys entirely on credit, and merchants and all others with whom he deals charge him twice or thrice the profit they charge prompt paymasters, and are unwilling to sell him goods at any cost. He has to beg and promise, and promise and beg, to get them on any terms. The merchants dread to see his wife come into their stores and the poor woman feels depressed and degraded.

The smoke begins to come out of his chimney late of a winter’s morning, while his cattle are suffering for their morning’s feed.

Manure lies in heaps in his stable; his horses are rough and uncured, and his harness trod under their feet.

His bars and gates are broken, his buildings unpainted, and the boards and shingles falling off—he has no time to replace them—the glass is out of the windows, and the holes stopped with rags and old hats.

He is a great borrower of his thrifty neighbor’s implements, but never returns the borrowed article, and when it is sent for, it can’t be found.

He is, in person, a great sloven, and never attends public worship, or if he does occasionally do so, he comes sneaking in when the service is half out.

He neglects his accounts, and when his neighbour calls to settle with him has something else to attend to.

Take him all in all, he is a poor farmer, a poor husband, a poor father, a poor neighbour, and a poor Christian.

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COAL ASHES.—The best purpose which coal ashes can be applied to in town or country is in making garden walks. If well laid down, no weeds or grass will grow, and by use they become as solid and more durable than brick.

## CURING GRASS BY STEAM.

In this age of wonderful inventions and bold innovations of old customs, it will not do to pronounce any new project absurd or impracticable before trial. One of the latest “improvements,” we have seen suggested in hay-making, is that of curing grass for hay—that is, discharging the water from it—by steam instead of the slow, imperfect process of drying it in the sun, often interrupted by rains, and the product injured or spoiled. A writer in the New York *Tribune* thus develops the new plan:—“If saturating grass with steam will have the effect, as we believe it will to cure it, so that an hour of sun will dry it, or so that it may be preserved with salt, it opens a new era in the use of steam for agricultural purposes. The process need not be a very expensive or laborious one. Let the grass be heaped up as fast as cut and covered with India rubber cloth. Then a pipe from a steam boiler, mounted upon a waggon, may be inserted under the center of the pile, and steam applied to a degree of heat strong enough to almost cook the whole heap; at any rate to prepare it for very rapid sun-drying. We believe, from some experiments which we have seen in drying other vegetable substances, that green clover may be prepared in three hours for safely stowing away in the barn. By using metal caps, instead of cloth, the process of steaming may be continued to a degree sufficient to expel all the moisture. Whether it can be economically used upon the farm, is the point which we wish to see settled, and that is what the agricultural societies should determine. Steam has already been applied to carry manure to the field, ploughing the ground, and thrashing the crop. No doubt it will be soon applied to sowing the seed and reaping, as well as mowing, and it only remains to cure the green grass as fast as cut, by the same powerful agent.

“This is not a chimera unworthy of thought. It is a subject which sooner or later will attract the serious attention of that portion of farmers who do think. Try it, if you please, on a small scale; take any succulent plant and subject it five minutes to steam, and then place it in the sun, and see how quick it will become as dry as well-cured hay. Apples, peaches, &c., can be dried by steam in one day. If grass cannot be cured by steam, let us know why.

“Will it be any more wonderful than it is now for a farmer to leave home at Buffalo in the morning and sell his crop the same day in New York—for him to get up in the morning and call for John to get out the mowing machine and small locomotive, and cut down that fifty-acre lot of clover to day, and tell George Henry to fire up the hay-maker and follow Alexander and William with the steam-raking machine, and cure that grass as fast as it is out, and I will come down with the four wagons, and let us see how much of that crop we can have safe in the barn before night. Peter!” “Yes, sir.”



"Peter, you may fire up the barn engine, and see that the hoisting machine is all right on both sides of the floor, for I shall bring two tons at a load, and while one ton is going up into the right-hand mow we can hitch on to the other, and have that up directly, so it will not take over fifteen minutes to get off a load. In the intervals between loads, keep the engine at work filling the great water tank; that last planting of potatoes needs watering, and as soon as the water is warmed in the sun a little, we will give them a shower. Ah, boys, this is the age of steam; you don't have to work to cure hay as I used to when I was a boy; when we used to cut all the grass with a scythe—" "By hand, father?"

"Yes, my son, by hand, slow, hard labor; and then we had to spread the grass dry, and then turn it over and over in the sun, with sticks and wooden forks, or clumsy iron ones; we had no steel ones then; and then we raked it by hand, and made it up in cocks, which had to be opened and spread out to dry again, and again raked up; then we pitched it on and off of the waggon, and sometimes it was a fortnight after it was cut before we could get it cured enough to stack or put in the barn."

"And all that by hand-labor?"

"Yes, hand-labor and hard-labor."

"Well, father, it does appear to me as though people must have been very stupid when you were a boy, not to have any steam-engines on their farms."

"No, not stupid exactly, but very hard to believe, or make improvements, or farm their land any way but just as did their fathers and grandfathers."

### STEAM AMONG THE FARMERS.

*From Chambers's Journal.*

Those who visit Christmas cattle-shows, simply in a grazing frame of mind, do justice neither to themselves nor to the show. There is something more to do than to admire fat pigs which cannot see out of their eyes, and fat sheep which look more silly even than lean sheep, and fat bullocks which measure an unlimited number of yards round the body. Unless a man roams also among the agricultural implements, he cannot rightly judge a matter which is well worthy of attention—the wonderful energy and activity of the farmers since the repeal of the corn-laws. It is no part of our business to dilate upon political combats, but it is unquestionably a part of every Englishman's business to know that the agriculturists are bravely 'putting their shoulders to the wheel,' and applying all modern improvements in furtherance of their labors.—The gradual spread in the use of steam-power is not among the least remarkable of these appliances. A year or two ago, we happened to meet with a 'Song of Steam' in an American newspaper; the name of the writer does not appear; but we feel inclined to reprint here three of the stanzas, partly because there is really a dash of sparkle and spirit about them, and partly because

we must beg that farming operations should in future be included in some measure among the labors of steam.

In the darksome depths of the fathomless mine  
My tireless arm doth play.  
Where the rocks ne'er saw the sun decline,  
Or the dawn of the glorious day,  
I bring earth's glittering jewels up  
From the hidden cave below.  
And I make the fountain's granite cup  
With a crystal gush o'erflow.

I blow the bellows. I forge the steel,  
In all the shops of trade;  
I hammer the ore and turn the wheel  
Where my arms of strength are made.  
I manage the furnace, the mill, the mint;  
I carry, I spin, I weave;  
And all my doings I put into print  
On every Saturday eve.

I've no muscle to weary, no breast to decay,  
No bones to be 'laid on the shelf;  
And soon I intend you may all go and play  
While I manage the world by myself.  
But harness me down with your iron bands,  
Be sure of your curb and rein;  
For I scorn the strength of your puny hands,  
As the tempest scorns a chain.

Without going so far as to expect that we may all 'go and play,' while steam manages the world by itself, we may undoubtedly expect that many hard and laborious kinds of field-labor will, more and more every year, be effected by steam, which has 'no muscle to weary, no breast to decay.' We have only to look at the groups of implements and machines proceeding from the well-known firms of Ransome, Wedlake, Garrett, Crosskill, Hornsby, Dray, &c.; or to look through the lists and catalogues of those manufacturers: the evidence of the fact becomes then very apparent. Let us very briefly glance at the matter.

Here are the productions of Messrs. Clayton and Shuttleworth, of Lincoln, among which, a three horse-power portable steam-engine is conspicuous. This compact affair is shaped something like a locomotive; it weighs about a ton and a half, and its provender consists of three hundredweights of coal, and 270 gallons of water per day of ten hours. With this moving power, it will thrash out twenty quarters of corn per day; and when it has done its work in one barn or thrashing-floor, a horse will easily draw it to another. Similar engines are made of four, five, six, seven, eight, and nine horse-power, all presenting this analogy—that the number of horse-power produced is about equal to the number of hundredweights of coal consumed in a working-day of ten hours—a convenient rule for estimating the efficiency of the power. The larger of these portable steam-engines require two horses to draw them from place to place; but in return for this, they will thrash out a larger quantity of corn per day, and become applicable also to grinding, sowing, pumping, and other operations necessary on a large farm. The seventy-horse engine is large enough to be made available for a remarkable system which has sprung up in some districts—namely, the *letting out of steam-power*: a portable steam-engine travels about from farm to farm, doing the thrashing and sowing, and grinding and pumping for each in succession—a system susceptible of wonderful expansion. Then there are fixed steam-engines

for farm-work, of four to ten horse-power each.—Another ingenious apparatus is a portable thrashing-machine. This is not a steam-engine, but a capacious vehicle on four wheels, having thrashing mechanism within, and pulleys and bands on the outside to enable it to be worked by a steam-engine, either portable or fixed. The facilities thus afforded are remarkable; for you may either take the steam-engine to thrash, or bring the corn to be thrashed, according to the arrangements of the farm. The corn is bundled into the vehicle; the steam-power commences its activity, and revolving arms proceed to thrash out the grain with great rapidity. In one form of the machine, the whole of the process of thrashing, straw-shaking, riddling, winnowing, and bolting, are performed by steam-power, and in their proper order. How there must be certain revolving arms, and certain revolving cylinders, and certain wriggling or vibrating troughs, will be evident to those who consider the nature of these operations. Then there are straw-shaking machines, and corn-grinding mills, and bone-crushing mills, all worked by steam-power, and all applicable to farm-labor.

Here are Messrs. Dray's portable steam-engines; and here Messrs. Hornsby's; and here Messrs. Garrett's, and Messrs. Barret's, and Messrs. Ransome's; and so on. The relative merits of each and the trade competition between them, we have nothing to do with here. The great point is to know that there are a dozen firms or more manufacturing these powerful aids to agriculture. Some excel in the rapidity with which steam is got up: while others excel in the amount of horse-power produced by the consumption of a given weight of coal.

The Royal Agricultural Society was mainly instrumental in bringing forward the moveable steam-engines for farms, in the interval between 1841 and 1851. Mr. Pusey, a great authority on all these matters, has thus noticed the advantages of portable over fixed engines for farm-work: 'If a farm be a large one, and especially if, as is often the case, it be of an irregular shape, there is great waste of labor for horses and men in bringing home all the corn in the straw to one point, and in again carrying out the dung to a distance of perhaps two or three miles; it is therefore common, and should be general, to have a second outlying yard; and this accommodation cannot be reconciled with a fixed engine. If the farm be of a moderate size, it will hardly—and if small, will certainly not—bear the expense of a fixed engine; there would be waste of capital in multiplying fixed engines to be worked but a few days in each year. It is now common, therefore, in some counties, for a man to invest a small capital in a moveable engine, and earn his livelihood by letting it out to the farmer. But there is a further advantage in these moveable engines, little, I believe, if at all known. Hitherto, corn has been thrashed under cover in barns; but with these engines, and the improved thrashing-machines, we can thrash the rick in the open air at once as it stands. It will be said: How can you thrash out of doors on a wet day? The answer is simple: neither can you move

the rick into your barn on a wet day: and so rapid is the work of the new thrashing-machines, that it takes no more time to thrash the corn than to move it.'

But steam does something more than this for the farmer: it helps to make pipes for draining his land; and it helps to steam potatoes and other roots as fodder for animals; and it helps to plough his land—although it must be owned that ploughing-machines have not yet come much into use. In respect to steaming potatoes for pigs, it has been remarked that even diseased potatoes, if not too far gone, by being thus treated may be rendered wholesome, and may be stored up for months.

If the visitor to a cattle-show, who spends a reasonable time in the implement-galleries or yards, would choose to extend his thoughts a little from steam among the farmers, to machinery among the farmers, he would soon find how wonderfully the use of such machinery has spread within the last few years. In nearly everything which can be called a machine in respect to farming, one of these three things is observable—that a man turns a handle, that a horse exerts its pulling force, or that a steam-engine puts forth its multiform power; and it is only those who have watched the progress of recent improvement, who can form even a guess of the wide extent to which the simple hand-instruments—such as the spade, the rake, the hoe, the dibble, the flail, &c.—have been superseded on large farms by skilfully constructed machines.—The old ploughs, with wheels and gallews, required four horses to draw them; but two horses can now do as much work with a plough of lighter and more scientific construction. The old harrows had their tines or teeth at a definite distance apart; but our farmers can now obtain expanding harrows, which can be adapted to the state of the land. The old rollers, in many cases, were simply tree-trunks, rudely fashioned into cylindrical shape, having their framework loaded with rough materials to give them weight; but now we have iron rollers, which will last for ever. The old farmers were wont to attempt, sometimes hopelessly, to break heavy clods by the alternate use of the roller and the harrow; but the farmers of the new school have now their powerful and efficient clod-crushers, whereby turnip-land can be prepared for corn with celerity and success. The old plough was expected to do more work than it could do well; but the scarifiers, and grubbers, and cultivators of the present day are analogous to a large party of ploughs, all working at once; whereby a large percentage of horse-power is saved. The old seed-lip and dibble deposited the seed very slowly; but the modern drill does this with astonishing quickness; and not only so, but it will even deposit manure and water with the seed in the hollows made for its reception. The old hoe was 'slow,' both figuratively and really; but the modern horse-hoe is a compound of four, six, or eight hoes at once, each working more quickly than the original hand-implement. The old sickle was the only instrument used by our fathers and grandfathers for cutting corn; but the



McCormick's, and Hussey's, and Bell's have shown us what can be done by reaping-machines. The old rake was the only implement for gathering stray hay and corn; but the modern horse-rake will do the same work ten or twenty times as rapidly. The old hay-fields exhibited simply the handicraft labor which supplied so many Daphnes and Collins to the pastoral poets; but the haymaking-machines now give a different aspect to the affair. The old carts and waggon in which the farmer conveyed his produce from the field to the barn, and from thence to market, were a terrible drag to the horses; but now, like clippers on another element, they weigh less, carry more, and move more quickly. The old flail beat about the corn in a rude way on the barn-floor; but the new thrashing-machine enables either horses or steam to do the work more conveniently and more expeditiously. The old process of winnowing left the wind to blow away the chaff in a blind and capricious manner; but the modern winnowing-machines have such a discriminating power, that they can separate the grain into 'good corn,' 'good tail,' 'tail,' 'whites,' 'screenings,' and 'chaff,' thus enabling the farmer to carry to market, produce, the quality of which can be exactly determined. The sheep and lambs of old days had to munch away at whole turnips, as best they might; but the modern turnip-cutter, by presenting the root in nice mouthfuls, economises the muscular power of the animal, and gives him an increased value in the market. The old chaff was cut by hand, with a sort of chopping or guillotine action; but the chaff-cutters now made, perform the work with far greater celerity. The old farmers drained their land, if at all, by using hand-made tiles, and pipes laid in hand-made grooves and gutters; but the new farmers can reap the advantages of the ingenious tile-machines, and can lay down the pipes by the still more ingenious draining-plough.

Nay, not only do farmers now display all this ability, but they have actually become poetical, which the world in general is perhaps not aware of. That Messrs. Moses and Hyam, as Messrs. Warren and Day & Martin formerly did, throw around their business proceedings a halo of poetry, everybody knows; but it has, until lately, been new to us that an agricultural implement-maker thinks it worth his while to lisp in numbers; and as it is not to be supposed that he would bring ploughs and poetry together, unless the farmers were pleased thereat, the latter must also have a share of the credit. Listen:—

Iron-ploughs as Kimble's, as Howard's, and Ball;  
Twin harrows and sowers, made large or small;  
I have ploughs too, for draining, for riding and hoeing;  
Click-a-shers and rollers, to prepare for sowing;  
Without manure-boxes, or with, I make drills,  
From one to ten coulters, Bean, cake, or malt mills.

Then as to carts—

The tipping apparatus is simple and sound,  
Surpassing all others its service is found.  
The self-acting tail-board is, too, a good plan,  
And must be approved of by master and man;  
It hangs upon hinges—no need to take off,  
Folds under the cart-frame, and catches aloft,  
To York I first sent it to meet public eyes,  
The Royal Society to me gave the prize;  
Prince Albert and noblemen all did declare,  
'It's the best one-horse cart that I have seen here.'

With a little chaff, we have done —

Sir, have you chaff-machines now worked by man?  
I recommend horse-power, my late improved plan;  
Many of them I have just lately put down,  
That give satisfaction to farmers around,  
And if you should doubt—hear what I now say—  
You can go to see them: they're at work to-day.  
I fix it for cutting aloft if you please;  
And one horse can work it—an old hack with ease.  
Without e'er a driver, one man with two boys,  
Can cut eighty bushels an hour without noise.

Opinions may possibly differ as to the merits of this poetic effusion; but there is no difference of opinion as to the simple fact—that agricultural implement-makers have placed the means of great advancement within the reach of farmers.—In 1851, Mr. Pusey made this important statement—that the improvement in farming-implements made within the preceding dozen years, had been such as to insure a saving on outgoings, or an increase of incomes, of not less than one-half on all the main branches of farming-labor.

## Natural History.

### THE OX.—HISTORY, MANAGEMENT, &c.

(Continued from last number.)

[The cuts illustrative of the following remarks, not being ready, we are obliged to go to press without them. They will appear in the next number.]

### THE MIDDLE HORNS.

#### THE HEREFORDS.

The Hereford white-faced breed, with the exception of a very few Alderney and Durham cows, have almost exclusive possession of the county of Hereford. The Hereford oxen are considerably larger than the Devons. They are usually of a darker red; some of them are brown, and even yellow, and a few are brindled; but they are principally distinguished by their white faces, throats, and bellies. In a few the white extends to the shoulders. The old Herefords were brown, or red-brown, with not a spot of white about them. It is only within the last fifty or sixty years that it has been the fashion to breed for white faces. Whatever may be thought of the change of color, the present breed is certainly far superior to the old one. The hide is considerably thicker than that of the Devon. Compared with the Devons, they are shorter in the leg, and also in the ear-case; higher, and broader and heavier in the chine; rounder and wider across the hips, and better covered with fat; the thigh fuller and more muscular, and the shoulders larger and coarser.

Mr. Marshall gives the following account of them; it is tolerably correct, but does not sufficiently distinguish them from their kindred breed. "The countenance pleasant, cheerful, open; the forehead broad; eye full and lively; horns bright, taper, and spreading; head small; chap lean; neck long and tapering; chest deep; bosom broad, and projecting forward; shoulder-bone thin, flat, no way protuberant in bone, but full and

mellow in flesh; chest full; loin broad; hips standing wide, and level with the chine; quarters long, and wide at the neck; rump even with the level of the back, and not drooping or standing wide and sharp above the quarters; tail slender and neatly haired; barrel round and roomy; the carcass throughout deep and well spread; ribs broad, standing flat and close on the outer surface, forming a smooth, even barrel, the hindmost large and full of length; round bone small, snug, not prominent; thigh clean, and regularly tapering; legs upright and short; bone below the knee and hock small; feet of middle size; flank large; flesh everywhere mellow, soft, and yielding pleasantly to the touch, especially on the chine, the shoulder, and the ribs; hide mellow, supple, of a middle thickness, and loose on the neck and huckle; coat neatly haired, bright and silky; color, a middle red, with a bald face, characteristic of the true Hereford breed."

They fatten to a much greater weight than the Devons, and run from fifty to seventy score. (A tolerable cow will average from thirty-five to fifty score.) They are not now much used for husbandry, though their form adapts them for the heavier work; and they have all the honesty and docility of the Devon ox, and greater strength, if not his activity. The Hereford ox fattens speedily at an early age, and it is more advantageous to the farmer, and perhaps to the country, that he should go to market a three years old, than to be kept longer to be employed as a beast of draught.

They are far worse milkers than the Devons. This is so generally acknowledged, that while there are many dairies of Devon cows in various parts of the country (none of which, however, are very profitable to their owners,) a dairy of Herefords is rarely to be found.

To compensate for this, they are kindly feeders. Their beef may be objected to by some as being occasionally a little too large in the bone, and the forequarters being coarse and heavy; but the meat of the best pieces is often very fine grained and beautifully marbled. There are few cattle more prized in the market than the genuine Herefords.

The Devons and the Herefords are both excellent breeds, and the prejudices of the Devonshire and Herefordshire farmers for their peculiar breed being set aside, a cross for the yoke or beef of the one will often materially improve the other. The Devon will acquire bulk, and the Hereford a finer form and activity.

The Herefords are evidently an aboriginal breed, and descended from the same stock as the Devons. If it were not for the white face, and somewhat larger head and thicker neck, it would not at all times be easy to distinguish between a heavy Devon and a light Hereford. Their white faces may probably be traced to a cross with their not distant relations, the Montgomeries.

The Hereford cow is apparently a very inferior animal. Not only is she no milker, but even her form has been sacrificed by the breeder. Herefordshire is more a rearing than a feeding county, and therefore the farmer looks mostly to the shape and value of his young stock; and, in the choice of his cow, he does not value her, or select her,

or breed from her according to her milking qualities, or the price which the grazier would give for her, but in proportion as she possesses that general form which experience has taught him will render her likely to produce a good ox. Hence the Hereford cow is comparatively small and delicate, and some would call her ill-made. She is very lightly fleshed when in common condition, and beyond that, while she is breeding, she is not suffered to proceed; but when she is actually put up for fattening, she spreads out and accumulates fat at a most extraordinary rate.

The breeder has been taught by experience, that when the cow, although she should be somewhat roomy, is too large and masculine, the ox will be brawny and coarse, and perhaps a little sluggish at work, and even somewhat unkind and slow in the process of fattening, and these are objections which, most of all, he would be unwilling to have justly made. The Hereford cow is therefore somewhat undersized; and it not unfrequently happens that she produces a bull-calf that grows to three times her own weight.

Kindly as the Hereford ox fattens, very few are grazed in their native county: even the least which the home consumption requires are principally heifers and old cows. The oxen are sold at five and six years old, in tolerable condition, at the Michaelmas fair in Hereford, to the graziers of Buckinghamshire and the neighbouring counties, by whom they are principally preferred for the London market.

The fertility of the soil in Herefordshire has been very much over-rated. The traveler and the superficial observer have been misled by the luxuriant woods and rich alluvial soil upon the banks of the rivers. The pasture-grounds are generally poor, and the herbage is not nutritious, and therefore the farmer naturally confines his chief attention to his rearing-stock. The dairy has been comparatively neglected; for experience has proved that the breeding qualities of a cow are materially lessened, and even her form is deteriorated, by her being inclined to give a large quantity of milk.

#### THE SUSSEX CATTLE.

Some of the ancient Britons sought refuge from the attacks of their invaders, amid the fastnesses of the Weald of East Sussex. Thither they drove, or there they found, some of the native cattle of the country; and they anxiously preserved them free from all admixture.

The resemblance between the Sussex and the Devon oxen is very great. They unquestionably betray the same origin.

The Sussex ox has a small and well formed head compared with many other breeds, and even with the Hereford, but evidently coarser than that of the Devon; the horns pushing forward a little, and then turning upward, thin, tapering and long—not so as to confound this breed with the long horns. The eye is full, large and mild in the ox; but with some degree of unquietness in the cow. The throat clean, and the neck, compared with either the long horns or the short ones, long and thin, yet evidently coarser than that of the Devon.



At the shoulder is the main difference, and the principal defect in the Sussex cattle. There is more wideness and roundness on the withers—it is a straighter line from the summit of the withers toward the back—there is no projecting point of the shoulder when the animal is looked at from behind, but the whole of the fore-quarter is thickly covered with flesh, giving too much weight to the coarser and less profitable parts. This is counterbalanced by many admirable points. If there is more weight in front, the fore-legs are necessarily wider apart, straighter, and more perpendicular than in the Devon; they are placed more under the body rather than seeming to be attached to the sides. The fore-arm is large and muscular, but the legs, although coarser than those of the Devon, are small and fine downwards, and particularly below the fetlock. The barrel is round and deep—the back straight—no rising spinal processes are to be seen, but rather a central depression; the line of the back if broken, is only done so by a lump of fat rising between the hips. The belly and flank are capacious—there is room before for the heart and lungs to prepare and circulate the blood, and there is room behind, in the capacious belly, for the full development of all the organs of digestion; yet the beast is well ribbed home, the space between the last rib and the hip-bone is often very small, and there is no hanging heaviness of the belly or flank. The loins of the Sussex ox are wide; the hip-bone does not rise high, nor is it ragged externally; but it is large and spread out, and the space between the hips is well filled up.

The tail, which is fine and thin, is set on lower than in the Devon, yet the rump is nearly as straight, for the deficiency is supplied by a mass of flesh and fat swelling above. The hind quarters are cleanly made, and if the thighs appear to be straight without, there is plenty of fineness within.

The Sussex ox holds an intermediate place between the Devon and Hereford, with much of the activity of the first, and the strength of the second, and the propensity to fatten, and the beautiful, fine grained flesh of both. Experience has shown that it possesses as many of the good qualities of both as can be combined in one frame.

The Sussex ox is of a deep chestnut-red—some, however, prefer a blood-bay: deviation from this color indicates some stain in the breed.

The hide of the true Sussex is soft and mellow; a coarse, harsh, thick hide denotes here, as in every other district, an ill-bred or unthrifty beast. The coat is short and sleek. There is seldom found on the Sussex ox that profusion of soft and wavy, and, occasionally, long hair, which, although it may have the appearance of roughness, is consistent with a mellow and yielding hide, and one of the truest indications of more than usual propensity to fatten.

The Sussex cow, like the Hereford one, is very inferior to the ox; she seems to be almost another kind of animal. The breeder has endeavored, but with comparatively little success, to give to the heifer the same points that the ox possesses.

The Sussex cow ought to have a deep red color, the hair fine, and the skin mellow, thin and soft;

a small head, a fine horn, thin, clean and transparent, which should run out horizontally, and afterwards turn up at the tips; the neck very thin and clean made; a small leg; a straight top and bottom, with round and springing ribs; thick chine; loin, hips and rump wide; shoulder flat—but the projection of the point of the shoulder is not liked, as the cattle subject to this defect are usually coarse; the legs should be rather short; carcass large; the tail should be level with the rump.

The Sussex cow does not answer for the dairy. Although her milk is of very good quality, it is so inferior in quantity to that of the Holderness or the Suffolk, that she is little regarded for the making of butter or cheese.

There is one great fault about the Sussex cows, seemingly inconsistent with their propensity to fatten, and which cannot be remedied. Their countenance indicates an unquiet temper; and they are often restless and dissatisfied, prowling about the hedge-rows, and endeavoring to break pasture, and especially if they are taken from the farm on which they were bred.

They are principally kept as breeders, all the use being made of them at the same time as dairy cows of which circumstances will admit. And it cannot be denied that they are generally in fair condition, even while they are milking; and that no beasts, except their kindred, the Devons and Herefords, will thrive so speedily after they are dried. The secretion of milk being stopped, the Sussex cow will fatten even quicker than the ox. It must, however, be acknowledged that the Sussex cows are not perfect, even as breeders; and that, unless a great deal of care is taken that the cow shall not be in too good condition at the time of calving, she is subject to puerperal fever, or "drooping;" while many a calf is lost from the too stimulating quality of her milk.

## WALES.

To the Principality we naturally look for some trace of the native breed of cattle, for the Welsh were never entirely subdued by any of the early invaders. The Romans possessed merely a portion of that country; the Saxons scarcely penetrated at all into Wales, or not beyond the county of Monmouth; the Welsh long resisted the superior power of the English under the Norman kings; and it was not until late in the thirteenth century that the Principality was annexed to the crown of England. We therefore expect to find more decided specimens of the native productions of our island: nor are we altogether disappointed.

The principal and the most valuable portion of the cattle of Wales are the middle horns. They are, indeed, stunted in their growth, from the scanty food which their mountains yield, but they bear about them, in miniature, many of the points of the Devon, Sussex, and Hereford cattle.

### THE PEMBROKE CATTLE.

Great Britain does not afford a more useful animal than the Pembroke cow or ox. It is black; the great majority are entirely so; a few have white faces, or a little white about the tail, or the udders; and the horns are white. The latter

turn up in a way characteristic of the breed, and indeed the general form of the cattle undeniably betrays their early origin. They have a peculiarly lively look and good eye. The hair is rough, but short, and the hide is not thick. The bones, although not small, are far from large; and the Pembroke cattle are very fair milkers, with a propensity to fatten. The meat is generally beautifully marbled. They thrive in every situation.

#### THE GLAMORGANS.

The Glamorganshire farmers of half a century ago, took great pride in their cattle, and evinced much judgment in their breeding and selection. There was one principle from which they never deviated:—*they admitted of no mixture of foreign blood*, and they produced the Glamorgan ox, so much admired for activity and strength, and aptitude to fatten; and the cow, if she did not vie with the best milkers, yielded a good remunerating profit for the dairyman.

They were of a dark brown color, with white bellies, and a streak of white along the back from the shoulder to the tail. They had clean heads, tapering from the neck and shoulders; long white horns, turning upward; and a lively countenance. Their dewlaps were small, the hair short, and the coat silky. If there was any fault, it was that the rump, or setting on of the tail, was too high above the level of the back to accord with the modern notions of symmetry. Their aptitude to fatten rendered them exceedingly profitable when taken from the plough at six or seven years old, and they were brought to great perfection on the rich English pastures—frequently weighing more than twenty scores per quarter. The beef was beautifully veined and marbled, the inside of the animal was well lined with tallow, and the Glamorgans commanded the highest price both in the metropolitan and provincial market. Among the Glamorgan-vale browns good cow-beef weighed from eight to ten score pounds per quarter, although some weighed as much as twelve or thirteen scores. Ox-beef is from twelve to fourteen scores per quarter; some, however, reached eighteen and even twenty scores.

During the French revolutionary war, the excessive price of corn attracted the attention of the Glamorganshire farmers to the increased cultivation of it, and a great proportion of the best pastures were turned over by the plough.

The natural consequence of inattention and starvation was, that the breed greatly degenerated in its disposition to fatten, and, certainly, with many exceptions, but yet, in their general character, the Glamorganshire cattle became, and are, flat-sided, sharp in the hip-joints and shoulders, high in the rump, too long in the legs, with thick skins and a delicate constitution. Therefore, it must be acknowledged at present, and perhaps it must long continue to be the fact, that the Glamorgans, generally, are far from being what they once were. They continue, however, to maintain their character for stoutness and activity, and are still profitably employed in husbandry work. The beef is still good, marbled and good tasted; and in proportion as the value of the ox to the grazier has decreased, the value of the cow has become

enhanced for the dairy. He who is accustomed to cattle will understand the meaning of this; and the kind of incompatibility between an aptitude to fatten in a little time, and on spare keep, and the property of yielding a more than average quantity of milk.

This is the breed which is established in the populous districts of Glamorgan. The Glamorgan cattle bear a close resemblance to the Herefords in figure, although inferior to them in size; they feed kindly—the flesh and fat are laid equally over them—the beef is beautifully marbled, and they yield a more than average quantity of milk. They are fattened to perfection at five years old, but not often at an earlier age: and they will become sufficiently bulky on the good pastures of the vale without any artificial food.

The cut is the portrait, and gives a faithful representation of the present improved breed of Glamorgan dairy-cattle. The average quantity of milk given by the cow is about 16 quarts per day.

Although we place the cattle of North Wales as “middle-horns,” we confess that we are a little approaching to the next division, the “long-horns.” There is, however, a great deal of the character of the “middle-horns” about them, and marking their common origin.

#### THE ANGLESEY CATTLE.

The Anglesey cattle are small and black, with moderate bone, deep chest, rather too heavy shoulders, enormous dewlap, round barrel, high and spreading haunches, the face flat, the horns long, and, characteristic of the breed with which we will still venture to class them, almost invariably turning upward. The hair is apparently coarse, but the hide is mellow: they are hardy, easy to rear, and well-disposed to fatten when transplanted to better pasture than their native isle affords.

The Anglesey cattle are principally destined for grazing. Great numbers of them are purchased in the midland counties, and prepared for metropolitan consumption; and not a few find their way directly to the vicinity of London, in order to be finished for the market. In point of size, they hold an intermediate rank between the English breeds of all kinds and the smaller varieties of Scotch Cattle; and so they do in the facility with which they are brought into condition. If they are longer in preparing for the market, they pay more at last; and, like the Scots, they thrive where an English beast would starve.

*To be continued.*

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EDUCATION.—This beautiful passage occurs in a late article in *Fraser's Magazine*—“Education does not commence with the alphabet. It begins with a mother's looks—with a father's nod of approbation or a sign of reproof—with a sister's gentle pressure of the hand or a brother's noble act of forbearance—with handfuls of flowers in green and daisy meadows—with birds nests admired but not touched—with creeping ants and almost imperceptible emmets—with humming bees and glass beehives—with pleasant walks in shady lanes—and with thoughts directed in sweet and kindly tones, and words to mature to acts of benevolence, to deeds of virtue, and to the sense of all good, to God himself.”



## Editorial, &c.

G. BUCKLAND, ESQ., EDITOR.

H. THOMSON, ESQ., ASSISTANT EDITOR.

### HINTS FOR THE MONTH.

March is nominally the first month of Spring, but is sometimes, in Canada, of almost as wintry a character as either of its predecessors. From the increasing altitude of the sun, however, the days when unclouded, are frequently of a genial, warmth, and the snow wears gradually away while the advent of spring birds, and the gradual swelling of the buds on the trees, give sure indications of the approach of the joyous and busy season of Spring. We have even known the frost out of the ground, and ploughing commenced in the first week of March, but as a general rule this work cannot be performed till after the first of April. The following old proverbs in reference to March will be familiar to most of our readers. Some of them are, however, rather less applicable to Canada than to the old country, where as the result of long experience, their accuracy is generally acknowledged.

"March hack ham, comes in like a lion, goes out like a lamb.

A bushel of March dust is worth a king's ransom.

March grass never did good.

A windy March, and a showery April, make a beautiful May.

March wind and May sun,

Make clothes white and maids dun.

So many frosts in March, so many in May.

March many weathers.

March birds are best."

The work to be performed in March will to a great extent be merely a continuation of that for the past three months, thrashing and delivering grain, tending the stock, getting out firewood and rail timber, &c., with the difference that the farmer must now keep more immediately in view the near approach of Spring, and so shape his operations that he may be fully prepared for that season when it does arrive. The importance of this in this country, where the season in which the soil and the weather are in the most desirable state in which to get in the crops is generally short, cannot be too much kept in mind. Let the horses or working cattle be well fed and in good heart to meet the work they have to go through; the harness well oiled and

repaired, the ploughs, harrows, whippetrees &c., in proper working order, the seed grain thrashed, thoroughly cleaned and stored in the granary, hay brought in from the stack or barn to the stable for the horses, and oats in the bin, clover seed and gypsum brought home to be ready for use when required, &c. By attending to all these things beforehand, instead of losing a day, or a week in doing them, just when the implement, the seed, or the fodder, is wanted for actual use, and thus perhaps losing the most favourable time for getting in the crop—all the spring work will go on much more pleasantly and satisfactorily, the farmer will be ahead of it instead of behindhand with it, and will find the advantage in the whole season's operations, and to a moral certainty also, he will reap the benefit in the produce of his crops at harvest time.

Cattle now require continued care, and a good quality as well as quantity of food, to enable them to keep up their condition through the changeable and trying weather of spring. But do not for the sake of economizing fodder, allow them to ramble in thawing weather, over the meadows. It may be doubted whether the little withered herbage they could so obtain would be of any real benefit to them, while the injury the trampling does to the meadows is very great. In hard weather of course there would be little loss except of a portion of the manure, which it would be much better to keep as much as possible in the yards, for use where more directly required, in the spring.

A pretty large number of lambs in this country, come in March, although the middle or latter part of April is considered by many the best time, and there is certainly then less risk. Early lambing ewes require great watchfulness on the part of the farmer, both on account of the ewes and the lambs; we alluded to this matter, however, in our last.

"The first great event in Spring," Stephens says, "on a farm of mixed husbandry, is the calving of the cows." We may therefore make a few remarks on this subject. From careful records which have been kept in England it appears that the average period of gestation in the

cow is about 284 days, or somewhat over nine months. The period is commonly supposed to be nine months, but cannot be reckoned upon to a certainty. The late Earl Spencer after having kept a record of the calving of 764 cows came to this conclusion:—"It will be seen that the shortest period of gestation when a live calf was produced was 220 days, and the longest 313 days, but I have not been able to rear any calf at an earlier period than 242 days." Lord Spencer considered any calf produced at an earlier period than 260 days, or later than 300, decidedly premature, or irregular, though in the latter case the health of the produce did not suffer. After the cow shows heavy in calf, which is usually after the sixth month, care should be taken that she is not allowed to over exert herself by climbing through heaps of straw, or breaking over fences about the yards. Neither should she be over-driven, or be exposed to the pushing and crowding of other cattle, as occurrences of this kind may cause an excited action of the animal's system, and possibly of the womb, to such an extent as to cause the cow to slip her calf. Such accidents will be prevented by having the straw yard and other appurtenances about the barns in proper order and condition. No very special system of treatment is required by the cow during pregnancy, except merely to keep her in comfortable quarters; especially in inclement weather; she should get a sufficiency of food, and care should be taken to prevent accidents. A resort to medicines, when the animal is not suffering from any disease is generally an error, as much as in the case of those people who take to doctoring themselves when they do not require it. The period at which a cow will calve is generally well known to the owner, if he pays proper attention to these things, both from the time of her reckoning, and from the symptoms which are usually shown at the time. As it approaches, Stephens says, in his *Book of the Farm*, "much more care should be bestowed in administering food than is generally done; and the care should be proportioned to the state of the animal's condition. When in high condition, there is great risk of inflammatory action at the time of parturition. It is therefore the farmer's interest to check every tendency

to obesity in time." This Mr. Stephens says, is to be effected by giving less fattening food, and as far as medical treatment can be applied, there is nothing perhaps so safe, as bleeding and laxatives. In Canada, unfortunately, it is generally poverty rather than over-feeding that the animals have to complain of. "It is in the eighth and ninth months that the critical period of a cow in calf occurs. The bulk and weight of the foetus cause disagreeable sensations in the cow, and frequently produce feverish symptoms, the consequence of which is costiveness. The treatment for this is bleeding once, in proportion to the strength and condition of the cow, and the administering of laxative medicine and emollient drinks, such as a dose of one pound of Epsom Salts, with some cordial admixture of ginger and carraway seed and treacle, in a quart each of warm gruel and sound ale." Turnips may be given, and they have a laxative tendency, especially the white varieties. For full and minute directions in case of sipping the calf, difficult cases of parturition, and of difficulty in getting rid of the cleaning, or after birth, &c., the farmer will do well to consult Stephens' admirable work. Perhaps Mr. Stephens on the whole, depends rather too much upon artificial treatment; he certainly gives very minute directions for it. In the majority of cases it is doubtless better to leave nature to her course, except in so far as proper diet and attendance goes, than to interfere. Undue interference by conceited and ignorant persons, is certainly sometimes productive of great mischief. But it behooves all farmers to make themselves thoroughly acquainted with these subjects, and then in cases of real difficulty, they will not be ignorant of the proper course to be pursued. Another excellent writer, the Rev. W. L. Rham says on this subject. "Cows must be carefully looked to at the time of calving, but except in urgent cases, nature must be allowed to perform her own office. A little common sense and experience will soon teach the possessor of a cow to assist nature, if absolutely necessary; and in cases of difficulty the safest way is to call in an experienced person. Drinks and medicines should be avoided; a little warm water, with some barley or bean meal mixed with it, is the most comfortable



drink for a cow after calving. The calf, and not the cow, should have the first milk, which nature has intended to purge its intestines of a glutinous substance which is always found in the new born calf."

#### GYPSUM--MANURES FOR HOPS--SUB-SOIL PLOUGHS.

We have received from Mr. Martin McMartin, of Cornwall, a letter containing the following inquiries, which we have much pleasure in answering:—

"At a late meeting of our Society, many of the members were desirous of information as to what soil, and what quantity of Plaster should be applied? Also what is the best manure for Hops, and the manner of applying it? And as we have imported a sub-soil plough, you might give insertions in your valuable paper, as to the best mode of using it."

**GYPSUM.**—The soils upon which this salt is found to act most beneficially, are such as are light and dry; all varieties of sands and sandy loams for example, which are deficient in sulphate of lime, the manuring principle contained in gypsum, or as it is usually called, plaster.—It is found to act more powerfully on dry than on wet soils, which is the case with most kinds of manure. On stiff clays it seldom produces much effect, but there are a large number of instances that have been observed in practice on different soils, and in varying climates, in which its action, or frequently non-action, cannot be satisfactorily accounted for. The usual quantity applied per acre, is from one bushel to one bushel and a half; which has often been found to produce quite as much effect, as a much larger quantity. Its effect on broad-leaved plants, such as clover, Indian corn, &c., is frequently astonishing. To the light land farmer it is a valuable auxiliary, and its cost a mere trifle.

**MANURES FOR HOPS.**—The best general manure for Hops, available in Canada, is unquestionably farm-yard dung. But then this should consist of something more than partially decomposed straw. When cattle have been well housed and fed, and their solid and liquid excrements mixed up with, and absorbed by the litter, and properly protected against rain, &c., in the

dung heap, we have then most valuable manure for hops, and indeed for any of the cultivated crops. The strength of farm-yard dung as a fertilizer, chiefly depends on the quantity of animals kept, and the *kind of food* on which they have been fed, and the subsequent care taken in preventing the liquid portion of the manure from running to waste. The best time for applying dung to hops, is as early in spring as practicable; it should be spread evenly over the ground, and immediately ploughed in, the intervals left between the hills it is best to dig by hand.—This operation may sometimes be advantageously performed before the commencement of winter. Old woolen rags, cut into small pieces, and all waste matter of animal origin, which is often only a nuisance in and about factories, are very valuable and permanent manures for hops. The English growers expend many hundred thousand pounds annually, in the purchase of such things for manure. A dressing of lime every five or six years, when the soil is not naturally rich in that important ingredient, will be found advantageous. Whatever manures may be applied, it is of much importance to incorporate them with the soil as early and as thoroughly as possible. The chief secret of successful hop-growing,—assuming that soil, climate, and other circumstances are favorable,—will be found to consist in liberal manuring, and frequent cultivation of the soil during the period of growth.

**SUB-SOIL PLOUGH.**—This is truly an indispensable implement in any system of improved husbandry, on *dry* soils; but on land that is wet, the drain ought, in all cases, to *precede* the use of the sub-soil plough. Subsoiling wet, adhesive clays, without draining, has often been found to render them wetter and more unmanageable than they were before. The use of the sub-soil plough is very simple. As deep a furrow as is practicable, is first made by an ordinary plough, say to the depth of eight or ten inches, in which the sub-soil plough follows, drawn by another team, and breaks up the ground to an additional depth of ten or twelve inches, or even more, without raising the sub-soil to the surface. By these means an active soil of great depth, is readily obtained, in which the roots of

plants can freely extend themselves in search of food. By increasing the depth of active earth, particularly in dry soils, *previously underdrained*, the crop will be much less affected, either by extreme wetness or drought. Sub-soil ploughing should be performed only in dry weather.

We shall always be glad to hear from our correspondent, or any of our readers who have the curiosity to try new things and fresh ways, as soon as any reliable results are obtained.

### THE DOUBLE PLOUGH.

No implement has undergone so many "improvements" within the last quarter of a century as the plough. Every farmer can remember the time when the plough in common use was a rough, heavy, wooden structure, with very little iron about it, and yet a load for man and beast. Now, we have them of all shapes and sizes, some wholly and others partly iron; and easily adapted to the strength of the team and the nature of the soil. It has been found that no one pattern is universally the best, for the simple reason that a difference of soil demands some modification of the implement. And even the different *kinds* of ploughing on the same soil, can be done to the best advantage with ploughs specially adapted to the work.

We shall not attempt an essay on ploughs or ploughing at present. We wish merely to call the attention of readers to a plough,—or *plow* as brother Jonathan spells it—which has been extensively patronized by the farmers of Michigan, Ohio and New York, and we believe is growing into favor in all the Northern and Western States. It is called the Michigan Double Plough, and presents the appearance represented in the following cut:—



Although the above is patented in the United States it is by no means a new invention. We noticed in the Crystal Palace, N.Y., a plough constructed on the same principle, and sent we believe, from Holland, or one of the German States. Instead of the wheel, a wooden slide or shoe was attached to the beam which regulated the depth. It had only one handle, but in other respects was a well made, and serviceable looking

implement. It is said that the double plough will cut a deeper furrow than any other plough of the same draught, and leave it in a better state for after cultivation. We hope our readers will test the truth of these statements, and avail themselves of the improvement, *if it be one*.

### SHANGHAE FOWLS.

The barn yard fowl, though often neglected and overlooked, is nevertheless a most useful, and, in the vicinity of towns and cities, a most profitable part of the "live stock" of the farm. The advantage of attending to the breeds, and guarding against deterioration from a too constant intermixture, is just as great and as certain, as in the case of other domestic animals. The slender, long-legged, "skeery critters" to be seen in many Canadian barn yards, as ready to fly as run, and not to be caught without the aid of gunpowder, are a perfect nuisance. They hide their nests (when they condescend to make any) where neither two-legged, nor four-legged Tom can find them, and though making the welkin ring with their daily cacklings, they seldom lay more than a dozen eggs in a season. The profit of such fowls as these are a minus quantity, and they ought to be got rid of as soon as possible.

For the last four or five years a great noise has been made about the Shanghae and Cochin China fowls, and enormous prices have been asked and paid for them. A few years ago, the Dorkings were all the rage. It may do for city folks to amuse themselves, as amateur breeders, with Shanghaes at \$50 a pair, but the farmer wants something cheaper, especially if they are in the habit of tumbling off their perches and endangering their lives. The Shanghaes are great layers, and are much better to eat, than to be eaten. Now if both these qualities can be united in the same fowl (and we are told they can) by a cross of the Shanghae with the best of our common breeds, the farmer may profitably leave to the "amateurs" and "fanciers" the business and merit of preserving the pure breed *pure*, even to the "pale buff" and "light sulphur color."

It might be supposed that the Shanghae and Cochin China breeds, transplanted from a mild climate, would not stand exposure to the variable and rigorous weather of this latitude. But according to the following statements, which we



find in a Lower Canada journal, they do well even in the less friendly climate of that Province.

The following is from a late number of the *Montreal Herald*:—

#### SHANGHAE FOWL.

The following statements, upon which we can rely, may be interesting to the "Fanciers" of this breed of fowl, as also to those whose more material idea is confined to supplying the "pot": In July, 1852, a friend purchased thirty eggs, which were hatched during the remainder of that month. The produce was four hens and a cock. The hens commenced laying the following January, being then five and a half months old. During last spring and summer, and up to this date, they laid five hundred and thirty eggs, hatched twice and reared sixty-two chickens, the greater part of this latter stock have now been killed or otherwise disposed of. The young pullets remaining are now laying and have done so since they reached five and a half months old. The present live weight of the old and young stock is as follows:—The four old hens, now one year and five months old, average  $7\frac{1}{2}$  lbs. Two young pullets, just seven months old, weigh each a fraction over eight pounds, and two young cocks of the same eggs, eight pounds four ounces. The remainder are the same average weight as the old stock. He believes them to be a hardy breed of fowls, easily kept, and consuming little more than would be required to keep an equal number of common fowls in good condition, while, as above shown, they are more profitable. The flesh is excellent (?) as is also the flavor of the eggs, when the diet of the birds is attended to. The fowls are kept in a wooden out-house, with good light, packed around the bottom with snow, quite away from any artificial heat, or the heat of animals, and are expected to lay all the winter. Their food is chiefly Oats and Buckwheat mixed, and a little Indian Corn, before going to roost. Clean water they should always have, and some grains or boiled potatoes once or twice a week is found to do much good during winter, besides some broken egg-shells and old lime. Leaves collected in the fall makes capital litter. The perches should be round and of easy access to the birds, and in this severe climate covered with some old woollen stuff or carpet.

The following appeared in a Quebec paper, written by a gentleman of that city, who signs himself "An Amateur":—

#### SHANGHAE AND COCHIN CHINA FOWL.

Under these names, a variety of the Fowl species has been imported into Great Britain and the United States, and more recently into Canada, which promises soon to change entirely the general breed of fowls in these countries; and, although small, they are good layers, and certainly good on the table. The Shanghae or Cochinchina Fowl, I believe, differ in no essential quality, nor the slightest degree in appearance; unless it be that the Shanghae are more feathered

on the legs, than the Cochin China, so called.—The Shanghae is a stately bird, and when well attended is handsomely feathered, although the colors are not so brilliant, as other species of fowl. Indeed the favorite color with fanciers is a pale buff or a very light sulphur color, and this color must not be mixed in any part of the body with any darker shades. It is a hardy bird, of rapid growth, and early maturity; in this respect they are amongst the fowl species, what the improved short-horn Durham is amongst cattle. The pullets, when well fed, generally lay at five months' old, and continue laying with very little intermission during the winter. The result of my experience this present season is this, five hens and four pullets gave me thirteen dozen and two eggs in December, besides dropping about a dozen soft eggs, at the commencement of their laying, from the want of a good supply of mortar and sand, which is absolutely necessary when confined in a stable, as they must be in this climate during the winter. It is not necessary that they should be kept very warm: in cold weather water freezes in my stable, and in moderate weather they are anxious to escape into an adjoining apartment to the stable, where they spend the day with apparent comfort to themselves. They are much less quarrelsome than the common fowl, and less disposed to wander away from any enclosure into which they are first put. They do not scratch about much, and in consequence of the very small wing, scarcely half the size of that of the common fowl, they very seldom attempt to fly; thus attention must be paid that the roosts of their houses are set near the ground, not higher than fifteen inches, and so rising about a foot, in a slanting direction, until the desired number of roosts is obtained. They have been killed by attempting to fly from a height, to which they had scrambled; thus care should be taken not to tempt them to get up, by leaving boxes or any thing upon which they can jump. The original cock bird of my collection (imported in the *Druid* in 1852, direct to this from Shanghae) was killed in this manner. He weighed fifteen pounds.—The hen died last winter, I believe, from the same cause, falling heavily from the roost. Her weight was eleven pounds. The egg of the Shanghae is not very large, but heavy and rich flavored, and generally of a chocolate color. I have some eggs, however, that are quite white. *I wish I could say something in praise of their flesh for the table.* It is dry, of a yellow color, and by no means pleasant-flavored, and the proportion of white meat, that is the breast, is so small, compared with the weight of the bird, that they cannot replace the small Canadian fowl in that respect, although I have seen some very fine birds, a cross between the Shanghae cock and common hen, larger in every way, flesh better colored, and with good laying propensities; and it is very probable much good might result from a cross in that way.

The new species, in my opinion, is principally of value as layers, and since eggs form an item of considerable value, in exportation to the United States, I would strongly recommend its adoption by farmers generally.

FAT HOG.

A pig only a little over two years old, bred and fattened by Mr. Edward Musson, of Etobicoke, has been slaughtered and exhibited in the Toronto market, and which weighed 703 pounds! The skin of the animal is described as being very thin, the quality of the pork excellent, although it had been shut up to fatten only about 3 months.

Tables showing the Monthly Fall of Rain, for 10 Years. at Toronto and Greenwich, near London

We have been favored with the subjoined tables by Sergeant Walker, who has been for many years officially connected with the Toronto Magnetic Observatory. The tables sufficiently explain themselves. It will be seen that a much larger amount of rain falls at Toronto than in the neighborhood of London; although in some of the western portions of England (Westmoreland, or example,) the average annual fall of rain, is nearly double that of this city. In Canada the falls of rain, particularly in summer and autumn, are frequently sudden and heavy, and usually of short duration;—hence we have upon the whole much clearer and finer weather than in England. Our average amount of rain, however, points out to the intelligent farmer, the desirableness and utility of a more or less general adoption of the important art of Draining.

| MONTHS.   | 1841  | 1842  | 1843  | 1844  | 1845  | 1846  | 1847  | 1848  | 1849  | 1850. | Mean 10 Yrs. |
|-----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------------|
| January   | 2.01  | 0.75  | 1.01  | 2.36  | 2.07  | 2.48  | 0.72  | 0.6   | 1.4   | 0.80  | 1.423        |
| February  | 0.77  | 0.69  | 2.20  | 1.81  | 0.77  | 1.45  | 1.2   | 2.4   | 2.20  | 1.30  | 1.483        |
| March...  | 0.8   | 1.3   | 0.29  | 2.03  | 1.07  | 0.88  | 0.3   | 2.7   | 0.30  | 0.39  | 1.013        |
| April...  | 1.64  | 0.8   | 1.57  | 0.23  | 0.44  | 3.07  | 0.65  | 3.2   | 2.00  | 1.81  | 1.544        |
| May....   | 1.50  | 2.01  | 3.5   | 0.15  | 1.98  | 1.47  | 1.10  | 0.20  | 3.6   | 2.30  | 1.782        |
| June....  | 2.28  | 0.98  | 0.94  | 1.58  | 1.6   | 0.47  | 1.0   | 3     | 0.1   | 0.99  | 1.305        |
| July....  | 3.50  | 2.45  | 2.55  | 2.32  | 1.5   | 1.37  | 0.54  | 1.80  | 2.80  | 2.70  | 2.164        |
| August... | 1.89  | 1.95  | 3.32  | 1.43  | 2.48  | 3.17  | 2.00  | 4.3   | 0.40  | 1.50  | 2.250        |
| Sept....  | 3.32  | 3.5   | 6.38  | 1.19  | 2.1   | 1.73  | 1.2   | 2.40  | 2.8   | 1.70  | 2.047        |
| October.  | 3.63  | 1.27  | 4.28  | 4.01  | 1.2   | 1.47  | 1.4   | 3.1   | 2.6   | 1.40  | 2.978        |
| Nov....   | 3.01  | 3.61  | 1.78  | 4.74  | 1.7   | 1.37  | 1.15  | 1.60  | 1.70  | 1.20  | 2.714        |
| Dec....   | 1.81  | 0.5   | 0.17  | 0.31  | 1.7   | 0.70  | 1.5   | 2.3   | 1.9   | 1.10  | 1.314        |
| Total...  | 28.19 | 20.03 | 22.12 | 22.19 | 19.00 | 22.63 | 13.02 | 17.54 | 21.60 | 17.50 | 21.378       |

RAIN IN INCHES ON THE SURFACE AT GREENWICH, ENGLAND.  
From Greenwich Meteorological Observatory.

RAIN IN INCHES ON THE SURFACE AT TORONTO, C. W.  
From Toronto Meteorological Observatory.

| MONTHS.   | 1841  | 1842  | 1843  | 1844  | 1845  | 1846  | 1847  | 1848  | 1849 | 1850  | Mean<br>19<br>Yrs |
|-----------|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|-------------------|
| January   | 2.15  | 2.17  | 4.29  | 3.00  | 2.32  | 2.34  | 2.13  | 2.24  | 1.18 | 1.25  | 2.307             |
| Feb.uary  | 0.46  | 3.62  | 0.48  | 0.48  | 0.84  | 0.00  | 0.55  | 0.74  | 0.24 | 1.23  | 0.817             |
| March...  | 1.17  | 3.15  | 0.62  | 2.47  | 1.92  | 1.9   | 0.85  | 1.22  | 1.52 | 0.73  | 1.533             |
| April...  | 1.3   | 3.74  | 3.19  | 1.52  | 3.29  | 1.3   | 2.87  | 1.45  | 2.66 | 4.72  | 2.610             |
| May....   | 2.3   | 1.28  | 1.57  | 5.67  | 2.3   | 4.3   | 2.04  | 2.52  | 5.12 | 0.56  | 2.778             |
| June....  | 1.5   | 5.75  | 4.59  | 3     | 3.71  | 1.92  | 2.63  | 1.81  | 2.32 | 3.3   | 3.086             |
| July....  | 8.15  | 3.45  | 4.61  | 2.82  | 2.20  | 2.89  | 3.35  | 1.89  | 3.4  | 5.27  | 3.764             |
| August... | 6.17  | 2.50  | 4.85  | 3.1   | 1.72  | 1.77  | 2.14  | 0.86  | 4.97 | 4.36  | 3.244             |
| Sept....  | 3.34  | 6.16  | 9.7   | 4.30  | 6.25  | 4.52  | 6.67  | 3.11  | 1.48 | 1.73  | 4.739             |
| October.  | 1.3   | 5.18  | 3.79  | 3.13  | 1.76  | 4.18  | 4.34  | 1.55  | 5.97 | 2.08  | 3.339             |
| Nov....   | 2.45  | 5.31  | 4.76  | 3.18  | 1.10  | 5.8   | 3.75  | 2.02  | 2.84 | 2.96  | 3.355             |
| Dec....   | 6.6   | 0.88  | 1.04  | 1.61  | 0.00  | 1.21  | 1.19  | 2.57  | 0.84 | 0.19  | 1.631             |
| Total...  | 35.67 | 42.79 | 43.55 | 34.76 | 37.11 | 32.35 | 31.93 | 22.20 | 32.2 | 24.43 | 33.293            |

Literary and Miscellaneous.

WILLIAM McDougall, Esq., Editor.

HISTORICAL SURVEY OF THE INDUSTRIAL SCIENCES.

The parentage of the Industrial Sciences is to be sought in the necessities of human life—their birth in the preparation of food and clothing. From this rude beginning, a beginning bordering on the promptings of instinct, they have grown into an importance that commands the attention of the most civilized nations.

The necessities of human life, to which we have referred the parentage of the Industrial Sciences, are those of an infant race entering upon an untried career in a new world. It is scarcely possible for us, armed as we are with all the weapons and appliances of art, to estimate their keen oppressiveness. The pressure of want was heavy. The call of appetite was troubled. The changes of scenes and climate uttered forebodings that must have lain cold and heavy on the heart. The unsubdued world was before man—defenceless and inexperienced man.



He could not trust to its gratuity of fruits, or rest upon the energy of the arm alone, when the howl of beasts echoed in his rude dwelling. Weapons must be wrested from the earth; and with these, animals must be tamed and yoked, forests bowed, the soil torn up, and the deep and mysterious sea crossed in daring adventure.

As soon as the necessities of life were met by such endeavors, a new field of enterprise was opened up. It opened up in the idea of comfort. Thoughts of ease, security, beauty, and home, sprung into existence; and comforts became an engrossing interest. The habitation, the food, the clothing, the couch, and the state of man assumed a dignity becoming a rude conqueror. He felt his power and wished to enjoy his triumphs.

In attaining to this condition, *industry* was taxed. By this, and this alone, was man able to bear up against the pressure of wants, and support life. There was no room for the couch of indolence in the first homes of man. Every observation was needed; every fact was a treasure. Tact was philosophy, and to carry its culture forward, till it assumed the form of portable skill, became the prime object of the chieftain father.

The fruits of these rude endeavours were all garnered, and religiously committed to tradition. The father handed over his wisdom to his son as he handed over his flocks; and in this way the human race became wise by each age being cradled in the knowledge of the preceding one. The Industrial Sciences arose.

*The Industrial Sciences embrace the varied exercises of human skill in meeting the necessities and promoting the comforts of man.* From a rude and somewhat infantile condition they have grown into a noble state of vigor. They are now distinct sciences, and claim the increasing care of the patriot and philanthropist. They have a place in legislation. Educators are beginning to include them in their schedule of instruction. With the American people, they are prime interests. They form the massive pedestal, on which a free people stand in rearing the superstructure of republican greatness.

#### AGRICULTURE.

Agriculture is the oldest and most important of the Industrial Sciences. Farming was undoubtedly the earliest employment of man. The cul-

ture of the vine and the tending of flocks are found among the records of the oldest antiquity. Man, as some infidels have supposed, did not begin life in a wretched orphanage. The traditions of the East, the songs of poets, the spirit of the mythology and revelation agree in introducing matured man to the breast of his earthly mother, and representing him as taught by something more than blind instinct to draw his support from the soil.

In looking back to that distant day, China is the first agricultural nation that claims our notice. Shuckford has made it more than probable that Noah and his immediate descendants passed into that section of the earth, and carried with them the knowledge of the antediluvian world. This branch of industry has always claimed the care of the Chinese; and to it, more than anything else, is to be attributed their character and the duration of their empire. An agricultural people naturally cultivate the elements of a permanent character.

Egypt early discovered that her wealth was laid up in her soil. The fertile valley of the Nile watered and enriched by a favoring Providence, was tilled by Mizraim. The field of Zoar became a garden; and the legislator, and the priest, and the king watched its ripening harvest, for by its tithes they were chiefly supported.

We cannot linger much longer in ancient times. We must leave the banks of the far-famed Indus and the vale of Cashmere—we must pass over the plains of Chaldea, and the agricultural homes of the Jews, constituted such by the ordination of God—we must hasten across the attractive peninsulas of Greece and Rome, and the rich islands of the Mediterranean Sea. In these quarters, kings guided the honorable plough.

We pause for a few moments at the Anglo-Saxon race. This wonderful people have always evinced a strong love for agricultural life. The whole line of their march, from Southern India across both continents, is marked by the *care of cattle and the culture of the soil*. To these things they owe much of their development—their bodily and mental vigour, their calm, collected notions, and their practical good sense. Communing with nature in the industrial toil that tills the parental fields, is the happiest and most serene condition of man. It should be at once the wealth and glory of the American. No nation, in ancient or modern times, has owned a richer agricultural inheritance than that which is possessed by us; and when the American farmer brings to his pursuits the contributions of science, farming will be the great source of national wealth.

#### HUNTING AND FISHING.

The chase was one of the first pursuits of man. His fields, and flocks, and person were to be protected, and called for the club, and trap, and rude spear.

At a later period, the field and flood tempted man to exercises of skill; and hunting and fishing began to put on something of the dignity of art. Beasts ceased to invade the cultivated spots of the earth. The eye and arm of man became a terror.

The work of necessity soon passed into one of utility. The slaughtered beasts were trophies of conquest, and furnished the material of food and clothing. The fruits of the earth ceased to be man's sole dependence. The dense forest and sea yielded to his control; and the conquering darts added to his security and comforts.

The work of utility became one of pleasure. Man was not content to kill in order to protect his property and meet his wants. He killed the beasts of the field in the joy of slaughter. The hunts of semi-barbarous monarchs are too well-known. Remnants of this state of things remain in the bull-fights of Spain and the field-sports of England.

Another change passed upon the chase, and linked it with the wealth of individuals and nations. It grew into a form of merchandise.—Companies have honored it. Legislation has honored it. In our own country the chase has been a high way to wealth. Princely fortunes have been made in the wilderness. The fur-trade, in particular, has risen into notice, and is among the most daring and profitable branches of mercantile life.

Fishing has even a greater interest for us than hunting. The living treasures of the rivers and seas of the world are its legitimate domain. At a very early period, man began to look to the waters for a supply of his wants. The inland seas of Asia were fished. The Indian Ocean has been searched by fleets to supply the tables of the Turanian race. Rome delighted in eels and oysters. France, England and America are united in treaties, that borrow all their interest from the herring, mackerel and cod fisheries. The capture of the whale is a national pursuit, and, with us, has not only called out a most profitable enterprise, but also trained a class of seamen unequalled in skill and daring.

#### MINING.

Mining, by which we mean the working of subterranean pits to obtain useful or precious minerals, is one of the most important pursuits of man. The mine is a concealed spring of wealth; and on it, in all ages, has been suspended much of the progress of civilization.

This branch of industry has its origin in the rude search for golden grains and sparkling gems. Central Asia was its first stage. The Phœnicians extended its range. The isles of the sea, Britain and Southern India were visited, and their metals and precious stones introduced into ancient commerce.

As a science, however, mining was scarcely known in antiquity. It was not till after the discovery of gunpowder, and improvements in mining implements had taken place, that veins could be followed up, and shafts sunk deep in the earth. *Hydraulic* machines, and, above all, the *steam engine*, have so armed man with power that, within the last fifty years, he has subdued vast subterranean domains, and scattered their treasures among the nations.

#### MANUFACTURES.

Raw materials are of little use in themselves. Food is to be prepared; clothing is to be made.

The ore is to be roasted, smelted, and pass through various processes before the useful metal can take the form of a machine, or the precious the shape of currency. Flax has to be rotted, bleached, dried, beetled, scutched, heckled, spun and woven, before it is fit for a garment. But these and all such works belong to manufactures.

*Manufacture is the application of knowledge and skill in changing existing materials into desirable forms and fabrics, to meet the wants and pleasures of man.*

It is a vast branch of enterprise. If we except agriculture, hunting, fishing and mining, it embraces all other departments of industrial science.

Manufacture stretches back into a distant past. Records of its doings have survived the flood. The *wheel*, and *loom*, and *needle* were engaged in producing beautiful fabrics as far back as 2000 years before Christ. Travelling merchants crossed Asia with precious wares. Babylon, and Persia, and Tyre, and Egypt had their purple and scarlet, and fine linen. Works of cunning workmen adorned their palaces.

The progress of this branch of industry has been magnificent. It has kept pace with the increase of intelligence and the multiplication of inventions. The useful and tasteful now meet in the same work, and beauty adorns the tools of the machinist. Stores are palaces. Merchants are princes.

The progress of manufacture in the United States has, within a few years, been rapid. Although a new country, and busied with laying the foundation of republican institutions, the feebleness of dependence has long since been shaken off, and the shivering colony of Plymouth has put in a claim for manufacturing skill, which the world is forced to respect. Turkey and Russia are enabled by American genius.

What the United States is yet to be in this department of labor can only be surmised. The natural resources of the country are rich and promising. Cotton fields lie beneath the southern sun; coal fields and iron stores enrich the north. Raw materials are abundant; and a noble system of common schools is supplying that intelligence which will enable every man who is so inclined, to convert them into manufacturing wares. But a sound national policy can alone secure these results.

And from whence is it to come? From the people. And how are the people to produce it? It must be the product of their general intelligence. The knowledge of the industrial sciences must be diffused abroad in society, till every man feels the importance of these departments of enterprise, and is ready to protect and honor all who are engaged in them. The people must become conversant with *agriculture, hunting and fishing, manufactures and highways* by land and sea. These are the industrial sciences, the strength and glory of the nation.

We are chiefly indebted to the *Popular Educator* for the foregoing "Survey."

Light flies at the rate of 200,000 miles in a second of time.



### THE GERMAN LANGUAGE.

Germany is that tract of country in Europe bounded on the north by the Baltic Sea; on the west by Holland, Belgium, and France; on the south by Switzerland and the Austrian territories in Italy; on the east by Hungary, Galicia, Poland, and Prussia. It comprises thirty-five states and four free cities. These cities and states compose what is called the *Germanic Confederation*. Frankfort-on-the-Main is the central point of this confederation. The kingdoms forming this league are independent sovereignties, but are joined together for protection against a common enemy, and for other purposes.

Germany, as known to the Romans, was of much greater extent than the country which we now designate by that name. It extended from the Danube on the south to the German Ocean and the Baltic on the north, including Denmark and the adjacent islands; and from the Rhine on the east to the confines of the Russian empire on the west. This country was inhabited by numerous tribes, under different names, but alike in their appearance and habits, and speaking the same language.

The early history of the Germans is enveloped in obscurity. From the affinity of their language to the Sanscrit and Zend, they are supposed to have originally been one of the tribes which emigrated from Central Asia, and overran Europe; but under what name, or at what period is unknown. The era from which we date our positive knowledge of them is 113 B.C. At this time a wild and unknown horde of barbarians appeared on the Alps, and attacked the Roman army, which was stationed there to guard the entrance to the empire. They called themselves Cimbri and Teutoni; and it is by these names that they are spoken of by the Roman historians of that period. The name Germani was given to them by Cæsar. It is derived from two Gothic words, signifying Lords of the spear. At a later period, they were called Goths, but this name was applied generally to all the northern tribes which assisted in the overthrow of the Roman empire.

The German language, called also the Teutonic has three great divisions; these again are subdivided into dialects. The three divisions are the Mæso-Gothic, the language of the conquerors of Rome, and the language in which are preserved the oldest specimens of any Gothic dialect; the High Germanic, the language of Southern Germany; and the Low Germanic, the language of the northern part of that country. The Low Germanic is much the same with the Anglo-Saxon

and the modern English. The High Germanic is the language from which is derived the modern German.

The translation of the Bible by Luther in the early part of the sixteenth century into this dialect, gave it the preeminence over the other dialects of Germany; and from that time it became the language of the educated.

As Germany is divided into many separate kingdoms, so the spoken language has numerous dialects. The principal of these are the Swiss, the Rhenish, and the Danubian; these, however are much alike, and the written language is understood throughout the country. This is the language which we still study.

Although the Germans were an ancient people, yet their literature is comparatively modern. This is owing to two facts. They had no written language for a long time, and they were devoted entirely to warlike pursuits.

Prior to the eighth century, there are but few monuments of German literature; and from the accession of Charlemagne at the close of that century, the literature of Germany may be said to date. The awakening of a literary spirit among the Germans at that time, is due to Charlemagne himself. He introduced the German names of the months, ordered translations of many Latin works to be made into German, and did everything in his power for the improvement of his native language.

The "Lay of Hildebrand and Hadubrand," and the "Prayer of Weizenbrun," belong to this century, and are the most ancient German Poems.

In the ninth century, the separation of the Germanic empire from the French, to which it had long been united, by establishing an independency of language, promoted the literature of Germany. A metrical paraphrase of the Gospels by Otfrid, a monk, was the most celebrated production of that period.

From the ninth to the sixteenth century, the literature of Germany was chiefly poetry. That was the age of the Minnesingers, the Troubadours of Germany, the golden age of German chivalrous poetry.

The Reformation of Luther, in the first quarter of the sixteenth century, gave an impulse to the German literature which was never lost; and from that time to the present, Germany has been renowned for illustrious names. In poetry we have Brinkman, Schiller, and Goethe; among philosophers, Leibnitz and Kepler; and in the department of criticism, especially upon the classics, no people have surpassed the Germans.

PAPER.—About 1822 an ingenious English manufacturer of this material, in experimenting for the purpose of producing a superior bank-bill paper, eventually succeeded in forming from the stalks of the nettle a paper fabric nearly as tough as parchment and difficult to tare. The piece shown to the writer of this, though too thick for banknote purposes, evidently proved that a valuable paper might be produced from this abundant source; and successive operations would doubtless eventuate in affording to the manufacturer almost any degree of fineness he might require. This hint may be of service to our manufacturers, and is, at least, worth a trial.—*Tribune*.

LIVING WITHOUT WORK.—“Heighol!” half-sighed a poor man last night, who had been toiling all day in the melting snow for the matter of seven shillings; “I wish I were able to live without work!” Just as if living without work wouldn’t be as near a synonyme for dying as one could find in Crabbe. Just as if living were not laboring, and time were not of deeds but years. Just as if a man could be alive all over without work—work of *some* kind, for hands, or brain, or heart. There’s many a man “dead at the top,” like an old forest tree, and only for want of a breath or two of life among the branches. There’s many a man to-day, drifting like sea-weed with the waves who, has’n life enough “to hold on” anywhere; who doesn’t rack with the shell-fish. Work makes the heart beat and the fire in the heart beats, the more one lives in one year or ten, and the better he enjoys it. Some people deem labor vulgar. Unluckily they are right. Everybody, or everybody’s father, has been compelled some day or other to do something, provided they did not steal, and it will continue to be so, probably, until the younger members of the old gardener’s family get back into the old homestead of paradise. If you have nothing to do for yourself there are plenty of people who need help, and are willing to pay for it in heart felt bewailings, as long as they live—an article, by the way, that many a millionaire cannot number among his goods and chattels.

## Reviews, &c.

### VALUABLE PERIODICAL PUBLICATIONS.

1 *The Illustrated Magazine of Art.* 2 *The Popular Educator.* 3 *The Historical Educator.* 4 *Cassell’s Natural History.* New York: Alexander Montgomery. Toronto: A. H. Armour & Co.

The above, we believe, are essentially British productions, from the press of Mr. John Cassells, of London, who has lately been distinguished for bringing out Educational publications of a high and original character, printed and illustrated in the best style of art, at uncommonly low prices. These works are by no means mere compilations; writers of high character in the different walks of literature and science are engaged upon them, and being expressly prepared to meet the wants of the masses, they are equally suited to the family and superior classes of schools, and are specially adapted to such as desire correct and general acquaintance with subjects of literary and scientific interest, and who have to prosecute their studies without the aid of the living teacher. Several British publishers, we are glad to observe, have established agencies in Boston and New York for the sale of their works, which are frequently offered at a considerable reduction from the prices at which they sell in England. The above works are published in monthly parts, at the very low price of a quarter of a dollar, except the “Popular Educator,” which is only seven pence half penny each number. Mr. Armour, of this city, is the agent in Upper Canada, for the sale of these and other useful and attractive works of the same publishers.

“The Magazine of Art,” consisting of upwards of seventy pages, royal octavo, profusely illustrated, is without doubt unrivalled for cheapness, when the excellence of its engravings, and the quality of its matter are considered. Such a monthly visitor to a family cannot fail to refine the taste and add largely to the stock of information and rational enjoyment of its different members.

“The Popular Educator” contains in each number agreeable and systematic instruction in several departments of human knowledge,—such as Language and Grammar, Geography, Geology, Botany, Arithmetic and Geometry, Physiology, Music, Biography, Political Economy, &c., all well illustrated where necessary. We have availed ourselves of information for the *Agriculturist* from this excellent publication.

“The Historical Educator,” judging from the first number that has been issued, gives promise of an entertaining and instructive work. Writers of well known talent are engaged upon it. The first article consists of the introduction to the History of Geography, including travels and discoveries by land and sea, from the earliest times. Mary Howitt commences the History of America; E. L. Godkin, the Geography and History of Greece; and the Rev. Dr. Beard, the History of English Literature. This number contains a map of Greece, and twenty-six other illustrations.

Of the “Natural History” we can only say that both as regards arrangements, clearness and attractiveness of style, paper and printing, and the numerous and beautifully executed wood-cuts of the feathered tribes, of a description of which the first seven parts consists, the work is richly deserving, what it has already obtained, a lasting popularity and a wide circulation.

THE ANGLO AMERICAN MAGAZINE, Toronto: Maclear & Co.

In obedience to a common law, evinced by our agriculture and commerce, this highly creditable miscellany, which is of indigenous growth, keeps steadily improving. In its letter-press and illustrations it usually contains much that is locally interesting to Canadians, while its contents generally abound in information of a useful and permanent character: The present number contains the continuation of the History of the War between England and the United States, impartially and lucidly written; with a review of Abbott’s life of Bonaparte showing the dark as well as the light side of the picture, and the usual amount of other articles, original and selected. There is a very interesting article on the North West Passage, accompanied by an engraved map; likewise a characteristic cut of a scene on Lake Seugog, an excellent engraving of the proposed new General Hospital, in Toronto,



which will add materially when carried out, to our already many superior public buildings, and the usual plate of the Fashions for the month. The Anglo American ought to have, what we hope it already does, a wide-spread circulation throughout the British North American Provinces.

*Transactions of the New York State Agricultural Society, vol. 12, for 1852.* Albany, printed by authority of the State Legislature. 1853.

We are indebted to the kindly consideration of B. P. Johnson, Esq., the efficient and much respected Secretary of the New York State Agricultural Society, for the last volume of its Transactions. We have been accustomed to look forward with no ordinary degree of pleasure to this annual exposition of that important Association, and we have derived much valuable information from the perusal of their volumes.

In the present report we find the usual information relative to the condition and operations of the State Society, and the different County Societies in connection therewith. The Reports on the trial of Implements; on curing and packing Provisions; on the cultivation of Grasses, and several other subjects will well repay a careful perusal. Dr. Salisbury contributes an interesting and valuable paper, containing the results of his analysis of a number of the ordinary plants and vegetables, cultivated as garden or field crops. A very elaborate report on the Agriculture of the County of Essex occupies 250 pages of the volume; it has been prepared by Winslow C. Watson, Esq., under the appointment of the State Agricultural Society, and embraces the civil and political history of the County; its natural history, including Mineralogy and Geology; its industrial progress and pursuits, with a detailed exposition of its agriculture. Such documents possess great interest and value. We shall turn more at large to certain portions of this volume hereafter.

*Norton's Literary Gazette*, New York: Charles B. Norton.

To the managers of Literary Societies, Book Clubs, Mechanics' Institutes, and indeed every man who has occasion to purchase, recommend, or form a judgment upon books, this publication will be found of indispensable advantage. It is published twice a month at the low charge of \$2 per annum. Each number contains clearly arranged lists of all works as they are published in the United States, England, France, Germany, &c., with their price, size, &c.—Also copious critical notices of the more important publications, a duty which is evidently executed with diligence, judgment and impartiality. There are in every number several well written papers on subjects connected with literature, schools and colleges, and the general interests of education, occasionally accompanied by well executed illustrations. As

libraries are in the course of formation in School Districts of Upper Canada, and Mechanics' Institutes, Agricultural Societies, and Farmer's Clubs increasing in all parts of the country, we can strongly recommend "*Norton's Literary Gazette*," as a most valuable auxiliary in carrying out the important objects of all such associations. It will also be equally valued by all such individuals as possess a literary taste.

*Chambers's Journal of Popular Literature, Science and Arts.* (New series) 1854.

London and Edinburgh, W. & R. Chambers; Toronto, A. H. Armour & Co.; Montreal, H. Ramsay, and John Armour; Quebec, P. Sinclair; Bytown, A. Bryson; Kingston, J. Duff; Hamilton, R. R. Smiley; London: J. M. Graham.

Who has not heard of, or rather, who has not read Chambers's world-renowned Journal? For nearly a quarter of a century has this most instructive and amusing Periodical been before the public, and always in the foremost ranks, as a sound and efficient instructor of the people, in the widest acceptance of the term. By means of this, and their other numerous cheap and well prepared publications, the Messrs. Chambers have been the means, in a high degree, of refining the taste and enlarging the sphere of intellectual enjoyment of the great mass of the people beyond, perhaps, any other publishing establishment, in this or any other age or country. They have the honor of being the first to strike out a plan of furnishing the million with a really cheap and wholesome literature, free from all sectional and party influence, and of still pursuing it, after a lapse of many years, with increasing energy and success.

A new and improved series of this Journal having commenced with the present year, offers a favorable opportunity of subscribing to the work. In this series several improvements will be introduced but the general tone and character of the work will be retained. A higher class of Fiction, embracing original contributions from the most distinguished writers, will receive special attention. A series of papers by Mr. William Chambers, comprising observations made during his recent tour through Canada and the United States, will shortly appear; and a monthly review, written in a popular style, of Books, Science and the Arts, is to constitute one of the new features. The Editors say that "it will be their constant duty to maintain in the New Work all those general features, which, for twenty-two years have given their Journal its extensive popularity,—a cheerful Light Literature, comprehensive Information, sound Ethics, and enlightened views of a Progressive Social Economy, without the admixture of controversial matter of any kind."

Judging from the first Part, which is now before us, we are compelled to say that the Editors have fully redeemed their promise. A most interesting Tale is commenced, on Modern Life, entitled "Weary

foot Common," from the attractive pen of Leitch Ritchie; besides a large number of ably written papers, on a variety of subjects, with which it behooves every one now-a-days to be conversant. All tastes, except the vitiated, and all classes, except the recklessly abandoned, will continue to turn to this periodical, as a source of sound instruction, social improvement, and rational enjoyment. For the gratification of our agricultural readers, we insert on another page, from the first number, an article entitled, *Steam among the Farmers*.\* In mentioning the amount of subscription, — only *ten shillings currency per annum*, — we do most heartily congratulate our numerous and widely scattered readers, on the increasing facilities they now enjoy, in procuring the best class of books, and that such a publication as CHAMBER'S JOURNAL, can now be received monthly, in any part of Canada, within the almost incredibly short period of about a fortnight after its publication in London and Edinburgh.

\*If our space would admit, we should be strongly tempted to treat our readers with the witty and instructive article headed, *Revelations about Sacks*.

### EDITOR'S NOTICES.

"WHAT SHARE OF THE GOVERNMENT GRANT TO A COUNTY AGRICULTURAL SOCIETY BELONGS TO THE TOWNSHIP SOCIETIES?"

This question has been asked by the officers of two or three Township Societies. The principle on which the division is directed to be made is to our mind perfectly plain in the Act. The 37th Section (16 Vic. Cap. 11) prescribes the conditions on which the public money shall be given to the County Society, viz:—That £25 at least shall be "first subscribed and paid," by members of the County Society and Township Societies together, when *three times* the amount raised will be granted for distribution, until the sum reaches £250. Now, if the Act stopped here, it would seem as a necessary legal result, that *each Society* contributing, would be entitled to receive *three times* the amount of its subscription. Thus if the County Society raised £20 and the Township Societies A, B, and C, raised respectively £30, £20, and £13 6s 8d, then the County Society could retain £60, while Township Society A would get £90, B £60, and C £40. Such was the operation (when strictly acted upon) of the old Act. But as disputes frequently occurred, and as it was thought desirable to favor the County Society by giving it *two-fifths* of the grant at all events, the 39th section was added. It declares first, that the Township Societies "shall be entitled" to a share of the grant. 2ndly, that as between themselves they shall draw "in proportion" to the amount raised among themselves respectively. This is a mere affirmation, or confirmation of the principle already recognized in Sec. 37. 3rdly, the time when the money shall be drawn is fixed. 4thly, it

provides (that is, qualifies, or restricts the application of the rule of "proportion" to this extent, and no more, to wit;) that "not more than three fifths" of the grant shall "be subject" to its operation; or, in other words,—*two-fifths* shall belong to the County Society unconditionally, and at all events. It would not only be a violation of the plain letter of the Act, but of its whole object and spirit to say, that the County may, as against Township Societies, retain *more than two fifths*. The case of a County Society and only one township Society, has occurred. This case is not contemplated by the Act, but we think the fair legal construction of its provisions would direct that as *two-fifths* belong to the County Society by express reservation, the *three-fifths* should be divided between the County and Township Society in proportion to the amounts raised by them respectively.

We hope that in the few cases of difficulty which have occurred these explanations may be found satisfactory. If not the Courts are open, and may be appealed to.

### LAYING OUT OF GROUNDS, DRAINING, &c.

We beg to call the attention of the public to Mr. CHARNOCK'S advertisements on another page, and likewise to his first article of a series on Draining, in the present number: others will follow in monthly succession. The long felt desideratum, a cheap and efficient drain tile and pipe machine, is on the eve of being removed, and we shall soon have machines embracing the most recent improvements matured in England, *manufactured in Canada!* We hope and trust that Mr. Charnock will not fail to receive that degree of public patronage to which his professional talent and character should entitle him. In referring to this subject in our last, a typographical error occurred which it is desirable to correct. Instead of Mr. Charnock brings out with him the best materials," read the best *Testimonials*. Parties having grounds to drain or lay out, either for public or private purposes, will always the most speedily realise their objects, on the safest and most economical terms, by employing a competent person who has had personal experience under varying circumstances, in matters of this description.

### PURE BRED SHORTHORNS.

We have much pleasure in calling the attention of our readers to the Hon. A. Fergusson's Advertisement in the present number. There must now be surely too much enterprise and prosperity in our agricultural community to allow Bull calves of the purest Durham blood to be fatted and sold to the butcher. When the great risk and expense of importing animals from the other side of the Atlantic are considered, people will surely not grudge giving a fair market price for superior bred animals, which are already in the country.



## POETRY.

## LABOR IS THE LOT OF ALL.

Ho! brother, is it thine to toil,  
With sweating brow, at Forge or loom,  
Dost gain thy bread above the soil,  
Or 'neath it, veiled in midnight gloom?  
Whate'er thy calling, murmur not  
Nor wish to 'scape the 'circling thrall.  
Which binds the world with common knot,  
For "Labor is the lot of all!"

Even ermin'd kings enthroned who sit,  
Have yet a nation's helm to guide;  
From prince to peasant, all submit  
To wear the yoke, though 'st cast aside;  
Then, brother! with a cheerful heart  
Obey the universal call  
Gird up thy loins, act well thy part,  
For "Labour is the lot of all!"

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[We have been requested by several subscribers to give, in each number of the *Agriculturist* a table of contents. As this will lessen the trouble of compiling a table at the end of the year, we willingly adopt the suggestion.]

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## SEWERAGE AND DRAIN-PIPE MACHINE.

MR. CHARNOCK begs to state that he will very shortly be prepared to exhibit one of his Machines in operation for Moulding Sewerage and Drainage Pipes of all descriptions, as well as perforated Bricks &c., and to receive orders for the same.

This Machine has been thoroughly tested in England, and is allowed by all competent judges to be the best extant for the purpose.

Early applications are desirable.

Sets of Drainage Tools, of the most approved kind, supplied.

Hamilton, 15th February, 1854.

## NOTICE.

## DURHAM BULL CALVES.

THE Subscriber does not intend to rear any Bull Calves for sale this Season, *unless to Order.*

Five thoroughbred Cows, Duchess or Bates blood, are now expected to Calve.

Intending Purchasers will, of course, be at liberty to select.

ADAM FERGUSSON.

Woodhill, Waterdown,  
February, 1854.

## HYDRAULIC AND AGRICULTURAL ENGINEERING.

MR JOHN HENRY CHARNOCK Hydraulic and Agricultural Engineer, (a Member of the Royal Agricultural Society of Eng and, and author of its Prize Report on the Farming of the West Riding of Yorkshire, as well as other papers on Drainage &c., published in its Journal; and late an Assistant Commissioner under the English Drainage Acts,) begs to offer his Professional Services to the City and Town Authorities, and to the Agriculturists of Canada, and to solicit the honor of the patronage and support.

Having for several years past devoted special attention to that branch of Engineering which embraces more particularly works of Town Sewerage and Water supply, the Drainage, Irrigation and general Improvement of Land, the planning and direction of Sewage and Drain-pipe works, Farm Buildings and Machinery, together with the laying out of Farms and Ornamental Grounds. Mr. Charnock ventures to think that such experience coupled with a practical knowledge of the approved systems and appliances of the day, will enable him to render valuable and efficient services to those who may favour him with their commands.

Mr. C. is furnished with testimonials from numerous parties of known standing and repute, which he will be happy to submit to those who may contemplate employing him. And all communications addressed to him, CITY OF HAMILTON, CANADA WEST, will have prompt attention.

JOHN H. CHARNOCK.

OFFICE. JAMES'S STREET, HAMILTON—At Mr. Simons', Land Agent, close to the St. George's Hotel.  
Hamilton, 15th February, 1854.

## THE CANADIAN AGRICULTURIST,

EDITED by G. BUCKLAND, Secretary of the Board of Agriculture, assisted by Mr. H. Thomson and the Proprietor. It is published on the 1st of each month by the Proprietor, William McDougall at his Office, corner of Yonge and Adelaide Streets, Toronto, to whom all business letters should be directed.

## TERMS.

SINGLE COPIES—One Dollar per annum.

CLUBS, or Members of Agricultural Societies ordering 25 copies or upwards—*half a Dollar each Copy.*

Subscriptions always in advance, and none taken but from the commencement of each year. The vols. for 1849-50-51-52-53, at 5s. each, bound.

N.B.—No advertisements inserted except those having an especial reference to agriculture. Matters, however, that possess a general interest to agriculturists, will receive an Editorial Notice upon a personal or written application.

THE  
CANADIAN AGRICULTURIST,

AND JOURNAL OF TRANSACTIONS

OF THE

BOARD OF AGRICULTURE, AGRICULTURAL ASSOCIATION, &c.

VOL. VI.

TORONTO, APRIL, 1854.

No. 4.

Reports, Discussions, &c.

TOWNSHIP OF HAMILTON FARMERS' CLUB.

At the meeting of the Township of Hamilton Farmers' Club held at Dixon's Inn, Court House, on Saturday January 28th, 1854. Alexander Alcorn, Esq., President, in the Chair.

Present—Messrs. M. Eagleson, Richardson, G. Black, Wade, Haywood, Taylor, Masson, Bourn, Bennett, Wright, J. Underwood, G. Underwood, Phillips, D. Black, Forsyth, A. J. Burnham, Sutherland, Dixon, &c., &c., &c.

The minutes of last meeting were read and approved, and Mr. George Black introduced the subject for discussion, viz., Draining, as follows:—

As stagnant water chills that genial warmth necessary to vegetation, all lands will pay for draining to such a degree that not only the surface but the whole of the staple or vegetable mould will be preserved in a sufficiently dry, healthy and friable state. Lands which are the chief objects of these improvements will seldom be brought to that state of perfection of which they are capable without the aid of covered drains held pervious by some substantial material, as stones or tiles, mere surface draining being at best an unprofitable substitute, because it does not draw the superabundant moisture from the roots of plants, and secondly, it occupies too much surface. When the mischief arises from water being partially obstructed, or from springs, there is no remedy but detecting these by digging wells, or boring with the augur, or adopting some method of discharging them which will immediately leave the land dry.

In considering what is called deep draining, which is the only method or rather principle of draining established on long experience, I shall endeavor to draw your attention to the following

facts. In order to conduct draining of this description to advantage, it is highly necessary to have a knowledge of the strata of the earth, and of the streams of water which slide between them from what are termed well springs. But I confess I have not that knowledge of geology which would enable me to point out clearly the many different positions of the strata, a knowledge of which is highly important in the operations of draining.—However, it is easy to conceive that the best method of preventing the well springs at the bottom of hills from keeping the land too moist is by cutting a deep horizontal drain on the side of the hill to intercept the water and carry it away, thus preventing its overflowing the level land on the plain beneath, then, with a level if necessary, find the lowest descent for an outlet, also the most proper course by which to discharge the water from the adjoining lands, commence at the lowest point, for instance a road, ditch, valley, or creek, cut the main leader perhaps up a fence side, when it may remain open until the foot of the hill is reached, when the plain which is too moist commences, then before cutting is carried farther it may save labor to tap with the augur between the wet and dry a little above where the oozings commence, to find the depth of springs, (that is to find the thickness of the upper stratum of the soil,) if these be only four or five feet then commence cutting the drain horizontally along the bottom of the hill to intercept the water, if the plain or field be conical or circular the water will run both ways, then an additional outlet must be made at the other side of the field, or it may happen that the field is lower in the centre than at either side, such being the case one leader up the centre will suffice. As the strata between which the water descends which forms these springs have generally the same inclination as the surface of the hill, or nearly so, it follows that the drain should be cut perpendicularly to the surface of the hill, as by that means the second stratum will sooner be reached. But if in cutting to the depth before mentioned you find the upper stratum is not cut through, and in consequence no water oozes into the bottom of the drain, it is then proper to bore with a five inch augur say three



or four feet deeper, until water rises into the bottom of the drain,—where these succeed many holes should be bored.

Another plan I have adopted is sinking holes in the bottom of the drains, (the drain being as narrow as a man can work in,) fill these up to the surface of the bottom of the drain with small stones. Both these plans are a great saving of labor, for when you cut through the porous beds where the springs are always found, these holes will draw the water from a great distance. This mode of draining will give a depth of from six to eight feet below the surface of the plain and thus the water will flow away rather than rise from the lower springs or apertures of the stratum through the incumbent soil to the surface of the plain which is so many feet higher, to secure this is the great secret of draining these grounds, when the springs cannot be cut into simply by a common drain. I have known water in such situations to follow the augur to the surface and run in a stream ever after, and when dammed supplied power for a threshing machine. Still I am aware that this one drain, deep although it be, is not of itself sufficient to dry a field properly if the field or plain has a great declivity. There may be other situations at a lower depth which run out on the surface at a lower level, perhaps half way down the field, or perhaps more, if so these ooziugs must be interrupted the same as before shown, but it is likely the drain will not be required to be more than half as deep as the former. As to the filling materials, nothing can be more obvious than that the preference should be given to the most substantial and lasting. I have used a variety of materials—such as stone-built rubble, gravel, tiles, whins, thorn brush, &c., and many other materials which would take too much space to particularize in this paper. Such drainage as I have been describing should be filled with stone or tiles, I may mention that I do not think stone is so safe a material to fill with in this country as they are in Britain, owing to the frost penetrating so much deeper here, opening the soil over a drain so much more, thereby increasing the danger of the water washing the soil into the drain from the surface and closing it up, especially if the drain has not a great descent with a large conduit. I have observed many instances of such cases with stone drains in Britain, and timber-filled drains in Canada. However, where stones are convenient they will answer the purpose, and they may with care be used in deep drainage with advantage. In this case it would only remain to decide whether the handling of stones would not cost more than pipes. In constructing such drains the conduit should be from four to six inches square, but of course depending on the quantity of water to be conveyed. In constructing these drains the stones should be placed in a row on each side of the drain at the bottom and a flat stone laid across the side ones, then fill up about a foot and a half with small stones and the remainder with earth. If the stones be flat and slaty they may be laid in the shape of the letter A or the letter V, that is to set two flat stones apart at the bottom and join them at the top filled up on both sides, or the reverse,

open at the top and joined at the bottom and placing a stone on the top in such a way as to drop in a little between the side stones, then fill for a foot and a half with small stones and the remainder filled as before. It will be seen that the two former methods require the drain to be wider at the bottom than the last mentioned. In a soft quicksand bottom, soles must be used, but in solid tilly subsoil they may be dispensed with. Deep drainage, which is principally to carry off spring water, I do not think requires to be filled to such a great depth with porous materials; I would recommend sod, or straw, or shavings, to be placed immediately on the stones followed by the subsoil dug from the drain, and made solid, and the remainder filled with what remains of common earth, because the water should be drawn into the drain from the sides near the bottom of the drain, and not from the top. But tiles with small stones, gravel, or other porous materials over them is superior to anything else, even in deep drainage.

So far these remarks allude to the necessity of drainage and proper management of land where the water arises from springs, but there is a large portion of our soils in Canada where, from the retentive clayey nature of the subsoil, the surface water does not pass away freely, therefore the subsoil is cold and chilly, and every kind of crop sown upon it grows stunted and slowly, therefore the season is far advanced before they cover the ground, in fact the best growing part of the season is lost. At this advanced period our hot sun and scorching winds commence with severity, carrying off moisture so rapidly by evaporation that the soil bakes, and the plant is held as it were in a vice, then, of course, soils in such a state cannot absorb moisture from above or below. To remedy these evils recourse must be had to thorough draining, that is cutting drains parallel with the declivity of the land at narrow intervals apart, the distances depending on the tenacity or porosity of the subsoil, the distance may vary from thirty to sixty feet, but so long as the water does not readily leave the soil, or any unnecessary moisture is retained, we may be assured that the full benefit of draining has not been attained.

Mr. Stephens says the depth of furrow drains should be from  $2\frac{1}{2}$  to 3 feet. I do not think that the frost would injure tiles or pipes at  $2\frac{1}{2}$  feet, but when stone is used 3 feet would be required, the subsoil on heavy lands is generally free from stones, therefore I think the cost of cutting might be greatly lessened by the use of the plough; suppose a broad-cutting plough would cut eight inches deep by twelve broad followed by a narrower one lifting six by nine, thus making fourteen inches, then a subsoil plough succeeding loosening six inches more, to be lifted out with a scoop-shovel made for the purpose, a repetition of the subsoil plough would loosen five or six inches more, this in a  $2\frac{1}{2}$  foot drain would only leave four inches to be dug with the spade, which would be necessary to level the surface of the bottom for the tiles or filling material. Our subsoils are not quite so tenacious generally as those of Britain, our climate being much drier induces

me to think that the depth and distances before mentioned would be sufficient for this country, as to all filling materials there can be no question but that there are none so durable and efficient as pipes or tiles, covered to a depth depending upon the porosity of the soil with small stones, gravel, or other porous material. Formerly, in Scotland, a great quantity of furrow draining was done with broken stone or gravel alone, which had a good effect. I think that such drains can be accomplished at less cost than the tile drains, and as there is any quantity of beach gravel on the front, which is excellent for the purpose, and back in the country many gravel beds of limestone to be found which would answer the purpose, such drains might be constructed in some kinds of soil with great advantage. I think pipes made in the shape of wheel boxes tapering to one end so that the small end would enter into the larger about half an inch or so. Tubes of this description would be cheaper than horse-shoe tiles as there would be no soles required, and taking less material and being more durable. I have seen drains constructed with such pipes which had worked satisfactorily for near a century.

I believe that a great portion of the heavy lands in Canada are growing wheat at a loss, owing to the superabundant moisture in the soil. I hold the opinion that if they were thoroughly drained and properly cultivated they would produce 50 or 60 bushels per acre with a great deal less labor and much less uncertainty than they now produce 25 or 30. I will close my remarks by giving a few extracts from practical men corroborating what I have advanced.

A farmer in Lanarkshire who thoroughly drained one half of a 4 acre field and left the other half undrained, in 1838 planted the whole field with potatoes, and from the drained portion realized £45, while the undrained only realized £13 per acre. Another instance of drainage—on the estate of Lord Hatherton under the direction of Mr. Bright; the soil was of a light nature resting on subsoil of stiff clay, the results are these—466 acres drained at an outlay of £1508 give a yearly increase of £435 or 29 per cent on the capital expended. Mr. George Bell of Aberdeen mentions the produce of potatoes on drained land to be 175 cwt. per acre, while that on undrained land of the same quality gave only 70 cwt. per acre, these are quotations from English works. I will now give an instance of two from our American neighbors. J. Johnson mentions that on drained land a crop of wheat, heavier says he, I never saw stand, was reaped from this ground; he draws his tiles a distance of three miles from the factory, and finds under draining to cost him about 30 cents per rod, and two rods distant asunder—or 22 dollars per acre, he finds horse shoe tiles objectionable from their liability to become filled from washing of the earth beneath them, and tubular tiles the only kind to be secure from this accident. J. G. Yeoman who has constructed nine miles of tile drain finds nearly an equal advantage on his light loam land, generally thought to be quite dry enough; the large amount of water discharged in one instance

at the road side from his tiles furnished a practical illustration of the need of draining, to those who observed it, stronger than all the books ever written on the subject valuable, as they may be; he brings his tiles from Albany 30 miles, and finds the drains to cost 40 cents per rod, about 3 rods apart, or 24 dollars per acre. Another farmer laid 12,000 tiles this spring, he says nothing pays so well as this business. Col. Sherwood of Auburn has laid 14,000 tiles and their benefit is already so obvious that he intends to lay more as fast he can. Judge Buell who laid two miles of tile drain procured them in Albany at an expense of 23 cents per rod for tiles alone, which afforded a passage for the water 4 inches square, he uses soles for the bottom.

Mr. J. WADE said, that Mr. Black had crowded a great deal of valuable information into the essay he had just read, and as Mr. B. had had a great deal of experience it might be implicitly relied upon.

There was no subject of more importance than draining to those who had springy or retentive soils, and though few farmers might be able to do all they wished, it was well to have a proper understanding of the subject, so that what they could drain might be done to the best advantage; one draw back to draining was a want of proper material to fill them with, he had never found a material that altogether pleased him. Horse shoe tiles used to be the great thing for filling drains with, but he believed they had now found that pipes fitted at the points with the collar did better, and could be made cheaper than tiles; he had used wood for pipes where he had drained, sawn one inch thick by three inches wide to set along the sides of the drain and a board four inches wide to cover on the top, but he thought that if he had laid any more drains with wood, he would use four boards, putting one in the bottom, as he found where the subsoil was loose the drains were apt to run out in places where they had much descent, and fill up where they were level, he had put in more than a mile of such drains on his farm, he found that in a field where about one-fourth used always to kill out when he had it in fall wheat, now since he had put drains in it the parts of the field that used to winter kill, now produced the best crop; he thought that at the present high price of land, those farmers that had money to invest would do better to invest it in draining and improving what they had, rather than to buy more land, as one hundred acres was easier managed than two hundred, and he believed that if properly drained 100 acres might be made to produce as much as 200 do now.

Wheat was killed by water standing on it in the spring, and there was no other method of getting rid of the water but by draining; he thought they would be encouraged to drain by getting pipe and tile at a cheap rate—in Britain they had a machine that enabled them to make pipes very cheaply; he thought that a good deal might be done at draining with machinery, so that little hand labour would be required.

Draining was regarded as at the foundation of all good husbandry in Britain, it was only at first



that draining was costly, as drained land was much easier wrought afterwards than undrained; we need make no costly experiments in draining, as we had all the experiments of others to go by.

Mr. HAYWARD said, that his family had been very extensively connected with British farmers, and he was never happier than when amongst them. He had come here to-day to enrol his name, and would be always glad to meet and learn from them. His farming was on a small scale, and as he had no experience in draining he could take no part in their discussion this time.

Mr. MASSON said, the first thing he would do would be to carry away the surface water, as he did not think that under draining would pay at all; he had drained some land since he came to this country, but it did not turn out what he expected; it did him no good and was labor lost; he would make open drains and water furrows, but would let stone and tile drains alone, as he did not think they would pay at all; he had had the best crops on the part of his farm that was wettest in the spring—possibly on spongy ground an under drain might pay, but not on such land as he farmed.

Mr. P. R. WRIGHT said, he was surprised to hear so many of them advocate underdraining, as for his part he did not think that subsoil draining was profitable here; there was a vast difference between this climate and the climate of Britain, where most of them took their experience from. Though he believed that more rain fell here than in Britain, yet it fell, or a great part of it, on the land when it was in a frozen state, and another part fell on the ground when it was so dry that it required all the rain that did fall; he thought that land ought to be properly surface drained; though his farm was very level he never allowed water to stand on it either in spring or fall; he thought that dry land was as much the better of draining as wet was, as dry land was made more moist by under draining, as it allowed the rain to pass freely through to the drains while the land retained some of the gases; he approved of making leading open drains to carry off surface water. He farmed for the purpose of making money, and so far he had been pretty successful, and he thought they would find their profits much more increased by surface than by underdraining; it would take a great deal of persuasion to make him undertake to drain land as they do at home. He did not wish to be misunderstood, he was no enemy to underdraining, only he did not think that it would pay; he would like to see a field taken and one half of it thoroughly drained and the other half left undrained, and then put the field through a rotation of crops and see if draining would pay, for his part he was satisfied it would not.

Mr. PHILIPS said, that in this country there was such a difference in the nature of the soil, that the system that might pay well on one farm might not answer for the next one, so that scarce any two could be carried on alike; he believed that Mr. Wright's farm though level, was a very peculiar one, and did not need underdraining; he thought that our highest rolling land was most subject to springs, and that underdraining was

most beneficial on them; he approved of making deep open leading drains through a farm, as the lay of the land might require, which not only dried the land along side of it, but it allowed you to put in under-drains where they might be required, which you could not do unless you had a deep leading drain; he approved of Mr. Black's method of filling drains with stones, as about ten years ago he had put above a hundred rods of drain in a field and filled them with stones, and they were as good as ever yet, not a hole had broke in, before he put the drains in that field it was impossible to get it sown in proper season, in the spring now it was the first dry ground on his farm, any person going on to that field when the crop was growing, could tell where the drains were, as for forty feet on each side of the drains was always a better crop than the rest of the field, he would prefer drains put in deep, he advocated deep underdraining according to a farmer's means, he would make open drains through swells.

Mr. BOURN said, that he had no experience in draining, but he would mention that he thought that a good deal of the rough cedar in our swamps that would not split for rails, might be sawn up for material for filling drains with after the method described by Mr. Wade, but he would prefer the side pieces to be of two inch thick; he thought that drains filled with stones were apt to wash and fill up.

Mr. TAYLOR said, that he thought that drains ought to be made in the spring of the year, so that the filling in had time to become solid before the fall rains, and then they would not be so apt to wash in holes to the drain; he had put in about thirty rods of drain, six feet deep at the bottom of a side hill, and he always found water at the mouth of this drain, it served him for a watering-place for his cattle in winter, and had enabled him to break up several acres that he never could plough before he had made that drain.

Mr. D. BLACK said, the most of his farm was dry land that did not require draining, but where he had made drains he just put three rails in the bottom of the drain, and on clay subsoil he found this plan answer very well but where there was quicksand they soon sanded up and became useless.

Mr. J. UNDERWOOD said, he was in favor of draining, if he had a farm of his own he would certainly drain it; he thought that open ditches ought to be made to prevent the water from running off one field on to another, and such a ditch would enable you to drain water furrows where necessary; he thought that underdraining was best though it would cost more at first, but when once well done it did not need to be done again, whereas open drains need making and cleaning out every season; he had seen drains made here in a strong clay subsoil—first dig about two feet deep and about fifteen inches wide, and then with a narrow spade made on purpose, dig about six inches wide and six or eight inches deep right along the middle of the drain, and then lay on a slate in the bottom of the drain, covering this smaller drain, and it seemed to answer very well,

as these drains had been put in a number of years and he had never seen any of them break in.

Mr. PRATT said, drains were things he had never seen made in this country, but every one knows that wet land ought to be drained, and when wet land is drained it would give a greatly increased crop. On clay soil he would not approve of tile drains, as tile drains did not draw well; on such land he would prefer drains filled with stones as they drew far better.

Mr. DIXON said, with regard to drains, he had dug a great many of them, and he thought that nothing would pay a farmer better in this country than draining; all that he had seen put in had paid well; he thought it was the duty of every one who owned land to drain as much of it as he could.

Mr. FORSYTH said, he thought drainage was very useful where the land was at all wet; he had seen draining do a great deal of good in Britain, but it would be very expensive here; land wrought a great deal mellowed, and manure did it more good when the water was taken off the ground.

Mr. GEO. UNDERWOOD said, he was perfectly satisfied that draining would pay; this make-shift system that we followed here might do while the land was new, but by and bye we would have to try some better system, and he had no doubt we would have to drain the land; he would prefer stones and tiles to any other material for filling drains with; he believed that underdraining would pay fifty per cent. on the cost; if land did not pay for draining, it would not pay without it.

Mr. ALCORN, in summing up said, that after the lengthened discussion we have had, he would not detain the meeting with any very lengthened remarks. Draining was, no doubt, of very great importance, but to go to the extent of *thorough draining* as they do in Britain, he believed that we could hardly afford that yet. One very important consideration was, that manure did very little good on wet land, and when the ground was wet, it was impossible to get the crops in, in proper season in the spring; he thought that underdrains should be dug at least three feet deep, and filled in with a pipe or tile at the bottom, and then about a foot of small stones above the tile. Where stones or tiles could not be got, he would use cedar or pine or any other durable wood; he would not think, in our present circumstances, of putting a drain in every furrow as is done where thorough underdraining is undertaken, but he would put them first in the low wet places, which are to be found on almost every farm, and which every farmer can point out where drains are necessary. On farms that are not springy or troubled with low damp places, open drains and water furrows would answer every purpose for the present, but as our lands get older, underdrains would be more needed. He quite agreed with Mr. Black's essay, and highly approved of his methods of draining.

A vote of thanks was given to Mr. Black for his able essay.

The next meeting of the Club was appointed

to be held at Dixon's Inn, Court House, on the last Saturday in February, at 2 o'clock P.M.

The subject for discussion to be Artificial Manures, to be introduced by Mr. Wright.

WALTER RIDDELL,  
Secretary.

# GUELPH FARMERS' CLUB.

## Subject—CLEARING LAND.

On Friday, February 10th, the monthly meeting of this Club was held at the British Hotel, T. Saunders, Esq., in the chair. The room was well filled and James Loghrin, Esq., delivered the following address:—

Mr. President and Gentlemen,—

So various are the means and circumstances attending the first settlers on their first settlement in the woods, that it would be impossible to lay down any general rule that would apply equally to them all. I shall therefore take the three following classes, as most likely to include a majority of the first settlers, and make a few remarks as to how they are likely to succeed; and then make a few remarks on the best and most profitable mode of clearing land. The first class of settlers I would notice, is the man that comes in without any means with him whatever; the second class is the man that has the means of paying for his farm, and keeping his family in provisions for the first year; the third class is a man that has the means of purchasing a farm, paying for clearing it up, putting good buildings on it, and making any other improvements he pleases on it. These three classes I take to be emigrants from some of the old countries, as men that have been in this country for any length of time know, or at least ought to know, how the first settlers succeed in the woods.

The first class is the man that comes to this country without any means, and perhaps a small family, and not even the means to support them for six months of the year. Many who are acquainted with the way that new settlers get along in the woods, would be inclined to say that this was a hopeless case, to talk of a man of this description buying a farm and paying for it, and clearing it up at the time; to such I would say, their case is anything but hopeless, for there have been hundreds and thousands that commenced under similar circumstances that have made their way through, and are now enjoying all the comforts this world can afford, and are as independent as any people on the face of the earth can be.

First we say that a settler of this description purchases 100 acres of land, at £1 per acre. If he can get good land for that, it will be cheaper than poor land would be at 10s. per acre, and he has 8 or 9 years to pay for it, say 8 years, with interest. The first thing is to raise a shanty on it for his family. The first year he will have to work out 8 or 9 months of the year, to make as much as will support his family, and get a cow; so that the first year he will not raise as much as



will support his family the following year. The second year, he will perhaps have to work out 3 or 4 months; but this year under good management he will raise plenty of provisions to keep himself and family. The third year he can work the whole of his time on his own place, and this year he will have a part of his crop to sell; but then by this time he wants a barn, waggon, and sleigh, and a yoke of oxen, if he has not got oxen before, and many other things, that it will take all he can spare, and more, to furnish his wants this year. The fourth year he still continues on improving and clearing up his farm; by this time he is getting in more comfortable circumstances: he raises his own provisions, and his own clothes, and has got most of the necessaries that are wanting on the farm, such as a house, barn, and farming implements, &c., but then there are 4 years past, and nothing paid on the land as yet; by this time the principal and interest will amount to £124; if there is compound interest, it will amount to more. The fifth year, this will be the first year that he can pay anything on the land; this year he may pay say £24, which will leave £106 to pay. The sixth year he may pay say £30, which will leave £82 to pay. The seventh year he may pay say £40, which will leave a little over £46, which he may pay off the eighth year; thus it will be seen that this class of settlers, in the course of eight years, will have a deed of 100 acres of land, and their farms partially cleared up, with their families growing up around them, and enjoying all the comforts of life.

In the above statement there will a good deal depend on whether he can get the land on the terms of payment, I have stated; if he must pay a certain sum down, and pay up the instalments as they become due, he will have to work out a certain time to make as much as will pay a few of the first instalments.

It is pleasing, sir, to go into any part of the country that is settled with this description of settlers. After they have been in a few years you will generally find them as contented and happy as any people on the face of the earth can be, with the prospect of a comfortable home for themselves and their children after them. Their food and clothing are coarse but comfortable, and their food is wholesome. Their wants are but few and easily supplied; for that unworthy customer, Pride, has not made his appearance among them with all the evils attending him.

Before leaving this class of settlers, I would say to them, be careful of getting into debt at the first settlement for anything but the land, but especially in the stores, for you will find that creditors have long memories, are very sceptical, and great observers of times and days. I think the best plan for new settlers, if they have their food and clothing, is to try and do without other things, until they have the means of paying for them. Then, again, there are credit sales, which it is common for settlers to go to, but which I think they would do well to keep from. There they generally get the worst and most useless articles, and have to pay the highest price—often a third more than they are worth. I never knew

any one make a fortune by going to them, but I have known many to have lost by them.

The second class of settlers are the parties that have the means of paying for their lands and keeping their families in provisions for the first year. No doubt, one of this class has a great advantage over the first; he not only has a better chance of having the pick and choice of the land, but he can go where he pleases and purchase; for it is generally said that a man with the needful in his pocket can make his own bargain; and no doubt he can purchase to better advantage than if he had not the wherewithal. Then, again, he has another advantage: he can work all the time on his own place, and if he should get on his place in time—say early in the fall or immediately after the harvest—he may raise abundance of provisions to support his family the next year. Then the next year they will have a part of their crop to sell; and from this time they will have something to spare to lay out on clearing their farms, if they wish to do it, as they have nothing to pay on their land. Thus it will be seen that this class has a decided advantage over the first class, for in five or six years they will have as much done as the first class will have in nine or ten.

We come next to the third class, or the parties who have the means of purchasing a farm and paying for it, paying for clearing it up, and making any other improvements on it they wish for. This class has a decided advantage over either of the other two, so much so that most people would be inclined to think that there can be no danger of them—a man with plenty of the needful with him can live any place;—but to this class I would say, be careful. It is true there are many of this class that have not only cleared and improved their farms, but added largely to their own capital, and have been a great benefit to the country around them; but it is also true that there are numbers of this class who brought the means with them to make them almost independent, that through their own mismanagement, or leaving the management of their affairs to others, have made a wreck of their fortunes, and left themselves to begin the world anew again at a time when they would most need something to live on. Never was there a case that the old adage would apply to better than this one:—

"He that by the plough would thrive,  
Himself must either hold or drive."

Farming is like every other calling or occupation: if you wish to be successful in it you must attend to it yourself, and be on the place at all times, both late and early. I have been told that keeping a good foreman would do as well; but however well that may work in the old countries, where every thing is wrought into a system, I must say that I have never yet seen it succeed well in this country, especially on new farms. The man that wishes to live by farming, ought to make up his mind to superintend the work himself, and he ought to know and see when the work is done, and how much ought to be done for a day's work, or for the wages he is paying for it, which is not easy to do unless a man can

take hold himself. The man that cannot do this had better try some other occupation. I think this class of settlers would do better by purchasing improved farms, than by settling on new ones.

This brings me to that part of the subject,—“The clearing of land, or the best and most profitable mode of clearing land.” When the woods are cut down in winter, to be cleared off in the spring, as is the case with new settlers, particularly the first and second class, the best way that I know of is, when the tree is cut down, to cut off the whole of the limbs or branches, and pile the brush or tops of the tree well together; for if any of the branches are left on the tree, they will generally bud in the spring, and consequently there will be more difficulty in burning them; and if the brush is not closely piled together, it is hardly possible to burn it early in the spring. And I would also recommend cutting the logs short, say 15 or 16 feet, but at most not more than 18, as the short logs are more easily drawn and put together, when the timber is green, and they will perhaps burn much better than if they were longer. But this mode of chopping in the winter and logging in the spring should be abandoned as soon as the parties have land enough cleared to keep their families, for it is a laborious work, and I think not so good for the land; then, after the first difficulties are over and the parties can do without logging it off in the Spring, (I mean the first and second class settlers, that take a hand in clearing their own land, and can let the logging remain over to the summer, I find the best and cheapest way to clear land is to slash it. What I mean by slashing is, when the trees are cut down to fall them into large heaps, the larger the better,—and I would have all the limbs cut off, and would prefer round heaps to wind-rows. In the first you can put solid timber on the top of each other, as the trees can be felled all round into it, so that the tops will all come into the centre; and there will be nothing but the butts of the trees lying out, so that if there is a good burn of the brush, the whole of the middle of the heap, both small and great will be burnt up; whereas, if timber is felled into long wind-rows, there will be some thin, and not much timber felled together; so that there will not be so much of it burnt up with the brush. If slashing is done in the winter, to be burned next summer, it should be done early in the fall; otherwise it would be better to let it lie over a year before the brush is burned. In all cases it would be better to let it lie over a year, both for the land and on account of its being so much easier logging, for there would be a great deal more of timber burnt up with the brush; but here I would not be misunderstood: to be successful in slashing, requires a man that has had some practice at falling trees. I have seen slashing done with the trees felled promiscuously back and forward across each other; they were felled wherever the trees were leaned to, and the brush not half piled; I would rather have the trees standing in the woods than have them cut down as those were. On the other hand, I have seen slashing done that I would as soon have it as most of the chopping that is done in the country. I had at one time

20 acres slashed, for which I paid 15s. per acre, with board. I got a good burn of brush, and it took 21 day's work of a man to cut it up, and leave it ready for logging; so that it was but a little more than one day to the acre to chop it up. It is true the logs were not cut short, but it was speedy logging. But, a great deal of this depends on a good burn of the brush.

As to chopping up of the trees into logging lengths, little can be said about it, as much depends on the nature of the timber, the weather, and the length of time it is chopped. If the weather be favourable, and hard wood timber, and it has been chopped over a year, very little cutting up will do it: and here, I would observe, it requires a man that has some practice in logging to do it. If you get a man that is unacquainted with chopping and logging, you will likely find that one-half of the cutting he has done is useless altogether, for he very often cuts where there is no need for it; and it is most difficult to convince them that they are wrong, if they are from the old countries, and well up in years. I think the best way to teach them is to let them chop and log a piece themselves, and then put them into a piece of good chopping to log: they will then see the difference.

Then, as to fencing, I would say to all new settlers, what fencing you do, do it well, whether with logs or rails, and you will find you will be great gainers by it in the end. As to brush fences, I think they are a curse to any settlement, as well as to the owner of them. They are a great means of making breachy cattle, and of getting the crops destroyed that are on the inside of them.

We come now to what more immediately concerns the third class of settlers: to inquire is it profitable to invest money in clearing land?—I think, the following statement will prove that it is. We shall take a field of ten acres, for four years, by way of experiment, and give a statement of the probable expense of clearing and fencing the land: the expense of putting in the crops, and taking them off, and of sending them to market: the last item of taking to market, I shall assume, as is the case with new settlements, that they have some thirty or forty miles to drive to market:—

|                                                              |   |    |
|--------------------------------------------------------------|---|----|
| Clearing and fencing ten acres, £4 per acre, £40             | 0 | 0  |
| The first year in wheat, seed 13 bushels, 5s per bushel..... | 3 | 5  |
| For sowing and harrowing.....                                | 1 | 15 |
| Harvesting and drawing into the barn....                     | 4 | 0  |
| Threshing and cleaning.....                                  | 4 | 0  |
| One year's interest on £40.....                              | 2 | 8  |

Total expense.....£55 8 0

YIELD OF THE ABOVE CROP.

|                                                                      |     |    |   |
|----------------------------------------------------------------------|-----|----|---|
| 20 bushels per acre, 200 bushels, at 3s 9d per bushel.....           | £37 | 10 | 0 |
| Deduct 7½d per bushel for taking to market.....                      | 6   | 5  | 0 |
|                                                                      | £31 | 5  | 0 |
| Remaining due on the land the 2nd year..                             | 24  | 3  | 0 |
| Two ploughings this year, one in the fall and one in the spring..... | 7   | 10 | 0 |
| Carried forward.....                                                 | £31 | 13 | 0 |



|                                            |    |    |   |
|--------------------------------------------|----|----|---|
| Amount brought forward.....                | 31 | 13 | 0 |
| 20 bushels seed barley, 2s 6d per bushel.. | 2  | 10 | 0 |
| Sowing and harrowing.....                  | 1  | 5  | 0 |
| Harvesting and drawing into the barn....   | 3  | 15 | 0 |
| Threshing and cleaning.....                | 4  | 0  | 0 |
| Interest on £24 3s.....                    | 1  | 10 | 0 |

Total expense.....£44 13 0

YIELD OF THE ABOVE CROP.

|                                                              |     |    |   |
|--------------------------------------------------------------|-----|----|---|
| 30 bushels per acre, 300 bushels<br>at 2s 6d per bushel..... | £37 | 10 | 0 |
| Deduct 6d per bushel for taking<br>to market.....            | 7   | 10 | 0 |
|                                                              | £30 | 0  | 0 |

|                                                                                |    |    |   |
|--------------------------------------------------------------------------------|----|----|---|
| Remaining due on the land the 3rd year..                                       | 14 | 13 | 0 |
| One ploughing this year for Oats.....                                          | 3  | 15 | 0 |
| 20 bushels Oats for seed, at 4s 4d.....                                        | 1  | 5  | 0 |
| Sowing and harrowing.....                                                      | 1  | 0  | 0 |
| Harvesting and drawing into the barn....                                       | 3  | 0  | 0 |
| Threshing and cleaning.....                                                    | 4  | 0  | 0 |
| Interest on £14 13s.....                                                       | 0  | 17 | 6 |
| This year the land should be seeded down:                                      |    |    |   |
| Timothy seed, 1½ bushels, 15s; Clover<br>seed, 1½ bushels, £1; sowing, 5s..... | 2  | 0  | 0 |

Total expense.....£30 10 6

YIELD OF THE ABOVE CROP.

|                                                                              |    |   |   |
|------------------------------------------------------------------------------|----|---|---|
| 40 bushels per acre, 400 bushels at 1s per<br>acre, taken from the barn..... | 20 | 0 | 0 |
|------------------------------------------------------------------------------|----|---|---|

|                                                                                                                                                                |    |    |   |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------|----|----|---|
| Remaining due on the land the 4th year...                                                                                                                      | 10 | 10 | 6 |
| This year the land is in meadow, and to let<br>it in any way they please, either to get<br>it cut on shares, or any other way, it is<br>worth £1 per acre..... | 10 | 0  | 0 |

£0 10 6

which will come within 10s 6d of paying off principal and interest.

In the above statement I have not taken into account the interest on the original cost of the land, nor the interest on the expense of putting in the crops, from the time the crops were sowed until they were sold.

Thus it will be seen that in four years the whole amount of principal and interest will be paid back; the land cleared, fenced, and seeded down, which will be 25 per cent of clear profit, exclusive of 6 per cent interest.

The above statement, I think, will stand the test of any ordinary year, and under any ordinary circumstances. I would not wish to send a statement out to the public, in any way that might be the means of leading any one astray. The expenses of working the land are given at the outside figure; the parties to find themselves and their team in board, which ought to be given up as soon as the owner of land has raised provisions to keep both men and teams. A farmer should always employ his teams, and board his hands, which would make a very different look on the above statement. The yield of the above crops is taken as such as may be depended on; and the prices are such as there would be little difficulty in obtaining in any ordinary year. It is true there have been many cases more successful than the statement I have made. I have seen some of the first crops of wheat more than double what I have stated it at, and the barley and oats at a third more than in the above statement;

and prices at a high figure, I have often where parties have been so fortunate with their known the first crop pay all expenses of clearing and fencing the land, but this cannot be depended on in a general way.

I shall now make a few general observations on chopping, logging and cropping, of the new land, as there are many of the emigrants that come here and work to great disadvantage at the first clearing of their farms. We will begin with underbrushing: all the poles and brush 6 inches in diameter, and under, should be first cut off close to the ground and piled into heaps: the next thing in chopping is to cut the large trees first, and get them close to the ground if possible, when there will be no need for cutting them up; if the large trees be felled across smaller ones, it will be necessary to cut them up, and many a hard stroke might be saved had there been proper care taken in felling the trees at first. When I first went into the woods, there was an impression on the peoples' mind that it was best to fell the trees across each other; after trying it for a time, I found this was a mistake. It may do to fall two trees across each other; they may be turned in together, to log to; but if there be 5 or 6 felled across each other, as is the case with most new hands when they commence chopping, the logs will all be to draw before they can be logged up; whereas if they had been felled along side each other with the largest trees felled first, there would be no trouble, but commence rolling the logs together at once, and many of them would not have to be drawn at all. After the log heaps are up and set on fire, they should be attended to,—roll them together two or three times a day.

Then as to cropping, I think that there should no more than three grain crops be taken off the land, until it is seeded down. By doing this the land will not get grown up with switch grass, and other dirt; and the crops of grass will be much better. In following this plan, the parties will find that if they should clear five or ten acres a year, that in nine or ten years, if they wish to give up clearing, the first that is chopped will be ready for breaking up, and the stumps will all come out, if hard-wood timber.

#### WATERLOO FARMER'S CLUB.

*Subject*,—BREED OF SHEEP BEST FOR CANADA.

The second meeting of this Club was held at the Union Hotel, Galt, on Saturday afternoon last.

A very numerous attendance of Farmers' took place and all seemed interested in the discussion. Some forty members enrolled themselves, and chose Mr. James Cowan, President of the Society.

Mr. Cowan, in taking the chair, remarked that he looked upon that day as the proudest one of his life. Farmers were generally proverbial for holding back from those unions which were

readily adopted by other classes; but the numerous meeting gathered around him would destroy this idea, as far as the Farmers of Dumfries were concerned. There were ten times as many present as he expected to find, and he could not forbear congratulating the Club upon its auspicious beginning. The discussion that afternoon was upon the breed of sheep best suited to Canada, and the best way of treating them. He would call upon Mr. J. D. Campbell to open the discussion.

Mr. Campbell remarked that it seemed strange for an old soldier to get up and speak of the merits of Sheep, particularly as there were many old shepherds present from some of the best sheep-producing parts of the old world. He had been in Canada now some thirty years, and he could assure them, that at the time of his arrival the breed of Sheep in Canada was a very bad one. But although the breed was a most inferior one, he always kept a few sheep, struggling on with them in the hope that better days were coming. Until about sixteen years ago, however, no improvement took place in the breed; but at that time Mr. Holmes (the speaker was understood to say,) near Paris, bought a Leicester Ram, of which he (Mr. C.) secured a lamb. Mr. Thompson of Waterloo, afterwards imported one, and there were some brought from the neighbourhood of London. To the Leicester Ram he procured, he put two Ewes, and had two lambs by them, but the breed gained very little. He got another Ram, part Leicester, and procured a change in the breed by means of Mr. Thompson's Ram, which had taken the prize at all the Dumfries Shows. *The first cross was always the best.* (Hear, hear.) If farmers were desirous of getting good sheep, let them look after the proper breed, and then take care of them. They should be fed on Pea Straw and Hay. He had tried and always found that the first cross milked the best. Last year he had 75 sheep, which he fed on hay, and got on an average  $5\frac{1}{2}$  pound of clean washed Wool from them, which he sold for  $35\frac{1}{2}$  cents a pound.

Mr. FERRIE,—How many Lambs in the flock?

Mr. CAMPBELL,—Thirty-four, off some of the Ewes he clipped as much as eight pounds.

Mr. FERRIE,—Was the first cross better than the offspring of the first cross?

Mr. CAMPBELL.—Yes! If a farmer bred a large flock, and only an eight-acre of pasture, he must change them often, for sheep require not only good but *clean* pasture, in order to do them justice. (Hear, hear.) When he fed hay, he always salted it, and he found that this system produced better sheep. If he were to begin farming again, he would buy the best Leicester ram he could procure, and four or five common ewes. He had crossed his breed now for fifteen years, and had got now a good stock of sheep, but crossing, if carried too far, would not be found to answer. Sheep must be taken care of.

Mr. COWAN.—Whether did the breed they found in Canada, with the usage and feed they got, or the improved breed, with their keep and usage, pay best? Was the difference in the return owing to the breed or feed?

Mr. CAMPBELL believed in feeding, it was the *weight* which paid. Were he again to commence sheep-farming, he would go to the back settlements, buy the coarsest ewe he could find, and put her to a Leicester ram. Put a Southdown ewe to a Leicester ram, and they would have the best mutton, which would always bring more per pound than any other. The condition of the sheep all depended upon its keep. When he came to this country he could not clip more than half a pound from each sheep; now his average, as he said before, was  $5\frac{1}{2}$  lbs. He had sold eight ewes, and eight lambs to an American last season, for which he got \$105. When he came, he wouldn't have got \$2 a-head. It was an old Scotch saying,—“What goes in at the mou' came out in the heart.” The best sheep for Canada, as regards weight of carcass and wool, was the Leicester, but they must have better feeding. He would change his breed every year.

Mr. Campbell was cheered on sitting down.

The Chairman here called upon Mr. Daniel Tye, who, he believed, dealt in Southdown sheep.

Mr. TYE agreed with Mr. Campbell as to the fact, that the first cross was best for butcher and farmer. The Southdown was very little known in this country, and as long as Leicester mutton would bring as much as Southdown, and produce more wool, the Leicester was the Sheep for Canada. But Southdown mutton, in quality, was far preferable to any other,—for instance, in the London market it brought 2d. to 3d. per pound more, and he believed that as soon as the mutton came to be exported to city markets, instead of being home-consumed, the Southdown would be acknowledged on all hands as the best. The Cheviot sheep made a very handsome carcass, and they ought to receive premiums at the Shows equal to Southdowns or Merinoes.

Mr. WM. BRUCE coincided with what had fallen from the previous speakers. The Leicester sheep in its first cross was the best sheep, and he had crossed with all breeds. Ultimately, he thought, the Leicester sheep would decrease, as a mutton-chop could not be cut off him. By all means get the male superior to the female in crossing, and get the best bred Leicester ram, as the higher the breed the greater the disposition to fatten. Use them well, give them plenty of food, and good shelter, and they would never regret it.

Mr. ANTHONY MARSHALL being called upon, said the best half-breed sheep he ever saw belonged to Mr. Brack, of Clinton. The gentleman kept half-bred rams for use, as he couldn't keep up the breed without them. The half-bred rams get good sheep.

Mr. W. BRUCE knew Mr. Brack, who went and got half-bred rams at the time of castration, and his own stock being half-bred he always managed to keep that breed.

(Here several gentlemen stated that this was the plan generally pursued where they had come from.)

Mr. COWAN said that some years back he became so certain that his sheep were degenerating, that he at once bought a Leicester ram, but as yet



there had been little improvement. The cross he had had between a pure Leicester ram and a Canadian ewe had come up in quality to what he expected, and he had begun to believe that the half-bred sheep was not what it was said to be. The progeny of the Leicester ram he thought inferior to the rest of his stock.

Mr. WILLIAM WELLS fed his sheep on hay through the winter. About the time the ground began to get black he gave them a few peas, as that was the time sheep generally fell off, if they did not get something to keep them up. He had only got about twenty sheep, and gave them about three bushels of peas through the month. He let them run through the year with the rest of his stock, and he considered, that running in that way, they paid as well as the latter, and thought he could keep eight sheep for one cow, taking all seasons into account.

Mr. DICKIE believed that Sheep paid better than Cows, and that six of the former, could be kept for one of the latter.

This closed the discussion, which throughout was well kept up and exceedingly interesting. The next discussion will be held on the last Friday in March, at 1 o'clock. Subject—"The best kind of Roots, and the best modes of cultivation." Mr. James Dickie to open the discussion.

#### EAST ZORRA FARMERS' CLUB.

*Subject.*—FENCING.

A meeting of the East Zorra Farmers' Club was held at Lappin's Hotel, 12th line, on Thursday, the 9th of Feb. Mr. Turner in the chair, the Secretary being absent, his place was filled by Mr. Croke.

The Chairman having opened the meeting, Mr. COOKE read as follows:

Mr. PRESIDENT AND GENTLEMEN.—Fencing is proposed for this evening's consideration, and I suppose it will be expected I should mark out a line different from our old established zigzag rail fence, but sir, my opinion is, that we as farmers in this township generally, have plenty of rail timber, or can buy it at a reasonable price, I think Sir, that we cannot in the majority of instances turn our attention to any mode of fencing more to our advantage; I know, Sir, that it is called by some men unsightly, but I have always thought that a farm well fenced in convenient fields did not look unsightly, I have heard Englishmen say the same. I would say that every man ought to fix up a straight fence in front of his dwelling, of posts and boards or pickets, and in particular his barn yard should have a good tight board fence around it to keep the wind from blowing the fodder out of the yard or in one corner, so that the master beast gets all the supper and leaves the rest to starve. I think, Sir, if we cultivate our farms well and put up good substantial homes for ourselves and our cattle, we for our own part need not take much thought for the more expensive sort of fence; we have borne the burden and heat

of the day in clearing our land, and I should like to take as much as possible from it, with a small outlay, with an eye always to a right system of cultivation, and leave the next generation to construct any fence that best suits their taste or convenience. With these remarks, Sir, I beg to leave the subject to some one better able to do justice to it.

Mr. JOHN SMITH. In taking a view of farms as they are at present, I think it is a duty to give this thing a serious consideration. When I came to this country I brought a few seeds in my pocket, intending to plant them here. I have planted an English thorn in this country and it is doing well. If I had a family here I would plant the inside of my farm with thorn fences, they will be expensive at the commencement, but after being brought to a proper size will be the best fences, because they will stand from generation to generation. We are well aware that our wooden and rail fences will soon be at an end, and I think we ought to consider about our future ones, with respect to thorn fences in particular, for I feel it my duty to make my fences permanent.

Mr. KING said, I do not understand the plan of raising thorns in this country, but in the old country we used to plant them in hedges as soon as they were three years old, along ditches, two feet and a half wide, and I would approve of the same plan in this country.

Mr. DALE. Well, gentlemen, I am very happy to see such a large company assembled for the purpose of improving fences. I approve of the plan of thorn fences and would be very happy to see them, along with every other improvement. When I was in the old country, I rented a farm of a gentleman, that was divided into fourteen large fields. My landlord told me to do as I wished with the farm, to the best advantage. I divided these into smaller portions with good thorn fences, when the quick began to grow it made a permanent fence in five years, needing no more expense. I hope they will have as good fences in Canada as there were when I was in Yorkshire. There is another thing I have to allude to; when I was in my boyhood my father planted some quicks, and before I left him he had excellent fences.

Mr. GRAFTON SMITH. I am very well satisfied with the former remarks concerning English thorn fences. There is another advantage in having them, that is there is a ditch required, which is not only of use to the fence, but also in draining the land. As for my part I shall try the benefits of a thorn hedge round my garden before a great space of time has expired.

Mr. DONALDSON. Mr. Chairman and gentlemen, the only remark I have to make is this. I perfectly agree with Mr. Smith respecting thorn fences, but at present I think we are a century or two too early. In the younger part of my life I was employed to protect thorn fences. Planting however, a thorn fence ten inches apart, it would take a person all his lifetime to raise what would plant or fence five acres, and providing they did equally as well as in England, it would take ten years before they raise enough to finish a fence. In the first place, it would take five years for the

first growth, then they would require cutting and laying, and after all that, they would require protection, and a straight board fence will not require more than a third of the land the other would occupy. In the first place, a proper thorn fence would require to be five feet in the base, with two four feet ditches; that is equal to thirteen feet and would occupy more room than any zigzag fences. A straight board fence will only occupy six feet clear from the plough, and if farmers have circumstances to do it, it is the cheapest fence that can be made. Until such time as they can be raised by practical men, I am of opinion that thorn fences cannot be put in practice.

Mr. MILMAN approved of thorn fences, but thought they could not do so well here as in the old country, they requiring a great deal of protection on account of the climate; banking he thought too was not so substantial as in England, and he instanced one portion of the Great Western Railway as a place that elucidated his theory. He would, however, be glad to see them in this country, if they could be made substantial.

After a few remarks from the Chair, a meeting was called for Donaldson's Hotel, on the 2nd of March. Subject—"Quality and varieties of seed."

A vote of thanks was then passed to the chairman for his conduct in the chair, and to Mr. Cooke for his paper, and the meeting separated.

## Communications.

### ON THE MODERN SYSTEM OF DRAINAGE, AND ITS APPLICATION IN CANADA.

(Continued from our last.)

#### No. II.

When in the exercise of his vocation the Engineer, the Architect, or the Mechanic, proceeds to lay out a Railway, erect an edifice, or construct a machine, he makes himself perfectly acquainted with the object to which he is about to apply his professional ability. He does not commence operations with vague ideas of what is to be attained, but he determines at the outset, by inspection and measurement, such a fixed and definite plan of his design that by adhering to it he in due time arrives at that completeness of result which he was thus pre-assured would be accomplished. And this holds good in almost everything we undertake: for if work is begun with an imperfect perception of what is desired, it is more than probable the result will be equally imperfect. Let us, therefore, first endeavour to understand clearly what it is we seek to obtain by artificial Drainage; and then consider the means by which it may be secured.

Now, the mechanical action of drains is two fold—the discharge of superfluous water; and the admission into the land of atmospheric and other influences—and in proportion as the work is effective in these respects will be its practical value. It may be asked then, in order to have some test of excellence whereby to judge of efficient Drainage: what is a fitting state of dry-

ness for land to be in to admit the greatest crops with the least compensating outlay? Fortunately we are not without unerring evidence to determine this point; for the transitions of strata are so numerous, and often so abrupt, that few can have failed to notice the more economical and certain productiveness of land on a naturally porous foundation, compared with the more precarious and costly yield of the strong and wet soils. We speak of the natural fertility, or otherwise, of these lands, as that arises from resting on an open or a retentive sub-soil; and we are sure that even the most cursory observer will be convinced that all the best and most productive land is that which does not require draining, because it is by nature suitably dry; whilst all the worse and least productive land is that which does require to be drained, because it is by nature too wet. Thus by the exercise of ordinary observation we arrive at the conclusion, that nature has on all hands set before us examples of land in the most suitable state of dryness for cultivation; and therefore, the more closely the same mechanical condition is secured in those soils to which artificial modes of drainage are applied, the more nearly shall we attain that perfection which is essential. There are, of course, many gradations of quality in the lands alluded to, but this does not affect the standard of suitable dryness which, from them, we would establish.

It could but little serve the great ends of practical utility to attempt to lay down arbitrary rules of depth, distance, &c., which experience and the ordinary operations of nature contradict: for if the advance which has unquestionably been realized in the art of drainage has demonstrated any one fact more than another, it is that no one plan of operation is equally applicable and effective on all lands; but on the contrary, that each case must be dealt with according to the circumstances of soil, sub-soil, contour, fall and meteorological situation. This is the province of the experienced Drainer, and his skill consists in so applying the remedy as that the work shall be complete and durable, whilst the cost shall not exceed a remunerative amount. We have laboured on many occasions to show that, whilst the strictest economy is exercised, completeness and durability are essential; and that it is the interest of the owner to secure these, even if at some additional expense, rather than by any temporary saving to jeopardize them in the slightest degree. The cost of Drainage is, under the most favourable circumstances, such as to justify the anxious desire of the proprietor to reap the full and permanent benefit of the application; and to the operator who understands and feels an interest in the work it is not the less satisfactory to know that all the anticipated results have been attained. After passing through the several probations of sod, turf, stick, wood, stone, slate, and common tile drains, the settled conviction has at length been arrived at in England, that the only perfect and permanent system of Drainage is with drains at not less than three feet deep, laid carefully with machine-made pipe-Tiles of suitable sizes, and when needful, having the joints covered by a collar of the same material. The cost of



such work varies according to circumstances from about £3 to £4 10s., (sterling,) per statute acre, on the more porous subsoils; and on the clay and stronger lands, from about £4 to £6. As evidencing the thorough satisfaction with which this system of Drainage has come to be regarded, it may be sufficient to state, that during the past 6 years the total outlay for such work in the United Kingdom cannot, on the most moderate computation, be less than six millions sterling; comprising an area of not less than a Million and a quarter of Acres; and, at the very lowest estimate, an increased produce of from eight to ten million bushels of Corn;—and yet the necessity for additional supplies is as great as ever; and the periodical anxiety for enough continues unabated.

Looking, then, at its geographical position, general contour, extent of woodland and water surface, the amount of rain-fall, and the comparative absence on the cultivated lands of channels for its ready removal, it may be fairly assumed that Canada would be as largely benefitted by an extended application of Drainage as the mother country. Stimulated by remunerative prices, which a population increasing at the marvelous rate of 104 per cent in ten years,\* and, it may be, the protracted effect of European events, seems calculated to ensure, the Agriculturist of the Western world has every encouragement to adopt improvements, which, while they prove highly advantageous to himself pecuniarily, will add materially to the physical well-being of the community. Adopting at once, without having to undergo a costly and tardy probation, the present perfected system, he cannot fail of a full and early reward for his energy and enterprise.

Knowing, as we do, in how short a period the introduction of mechanical appliances will not only furnish a supply of the best materials, but at the same time bring the cost of the work within due limits, we feel assured that the expense of Drainage in this country will, under ordinary circumstances, very little exceed the English average. No doubt, at first, it may be somewhat greater, but if the high rental value of land in England, with the cost of Drainage in addition, be compared with the lower value of the land, and higher cost of Drainage in Canada, the balance will be still greatly in favour of the latter country.

*To be continued.*

\* NOTE.—The increase in England is about 15 per cent in 10 years which is thought to be very great—how much more extraordinary then is 104 per cent! It simply accounts for the gradual advance in the price of Agricultural produce in Canada during the past year or two, irrespective of the influence of passing events;—and will as certainly have its effects in future.

Dry, clean walks from the house to the street, the barn and other outbuildings, are not only very convenient, but in excellent keeping with a neat dwelling, fence and yards. The best house with mud all around it in rainy weather, not only looks bad, but is very unpleasant and the source of much discomfort.

## ON THE EDUCATION OF FARMERS' DAUGHTERS.

*To the Editor of the Agriculturist:*

DEAR SIR,—In my last communication I stated my conviction that the outline of female education, as given by “H.,” though excellent in itself, is not exactly adapted to the condition, circumstances, and prospects of farmers’ daughters. Two important considerations which should influence female education are frequently overlooked;—first, the period for acquiring such education is very limited; and second, the female child was designed in her creation to be a wife and a mother, and she should be educated accordingly. That some do not become wives and mothers forms no available argument against the above statement, since they are the exceptions, not the rule. The period for acquiring female education being very limited, every subject which it would be desirable to study and learn cannot be attended to for want of time. The years which elapse between the period when the female child is capable of learning and the period when she becomes marriageable are very few. This being the case, those subjects should be studied which are of most importance to her own welfare, and that of the community of which she forms a part.

In selecting such subjects as a young female (a farmer’s daughter, for instance) should study, let her parents or guardians keep in mind her high destination; let them recollect that, in all probability, she is to be a wife and a mother; let them recollect that her influence, for weal or woe, over the present and future generations of mankind cannot be easily overestimated, and in view of her usefulness in the present world, and her happiness in the world to come, let her education be such as shall best enable her to discharge her duties to her husband, to her children, to her parents, to her other relatives, to the neighborhood in which she lives, to the community at large, and to her God. That young female has received the best education who is best prepared to discharge the various duties of child, sister, wife, mother, relative, friend, neighbor, and Christian.

In writing on female education, let it not be understood that I confine my views to what may be learnt at school. I consider the female child to be pursuing her education just as much, when under the direction of her mother, or other instructor, she is learning to sew, knit, spin, wash, make butter or cheese, or any other household work, as when studying geography or English grammar at school; so that by female education I mean that entire training by which the child is taught to know and to do whatever should be known or done. When Agesilaus, King of Sparta, was asked what things he thought most proper for boys to learn, he replied—“Those which they ought to practice when they come to be men.” The same may be said of girls,—they ought to learn in youth those things which they ought to practice when they come to be wives and mothers. There are two errors regarding female education which should, if possible, be avoided. I have known farmers’ wives,—intelligent, industrious women, the mothers of several daughters each,—

who, as soon as their children were capable of learning, have sent them to school, and kept them at school till they were marriageable. They were instructed in all those branches of education generally taught in schools for young females. Those mothers, meanwhile, working themselves out of health and life at home, have taught their daughters no domestic employment. These daughters have left school, very delicate, slender-waisted, lily-fingered young ladies, and said to be well educated, whereas if a young farmer should choose such a one for a wife, he would find to his dismay, that for all the purposes of housekeeping she is utterly worthless, and if he wants his shirt washed, or his cow milked, or his butter churned, or his cheese made, he must hire some person to do it.

Let none of your readers suppose, from these remarks, that I am indifferent to school education. I hold that "for the soul to be without knowledge is not good," that the mind cannot be too well furnished with substantial and useful information, that, if it were possible, with a due regard to other interests, it would be well for the female mind to embrace the entire circle of all the sciences; but I hold that there are interests, involving duties to ourselves, to our country, and to our God, which must be neglected if mere mental cultivation be carried too far.

The other error to which I referred above, is the neglect of school education altogether, or nearly so, which prevails to a great and lamentable extent. Both these errors should, if possible, be avoided. The following considerations seem to recommend themselves to the common sense of all who think seriously on the subject:—

1st. Education should be so conducted as to preserve, in their full vigor, the physical energies, and not to impair the health of the pupil.

2nd. School education should not be allowed to interfere with the urgent claims of humanity.

3rd. Education should be so conducted as not to foster habits of indolence.

4th. School education should not be allowed to clash with the claims of justice and honesty.

5th. School education should be so conducted as to cultivate the moral and religious feelings in conjunction with the mental faculties.

First, then, we hold that health should not, on any account, be sacrificed to mere mental cultivation. We often read of young men who "O'er books consume the midnight oil" till their bodily energies lie prostrate on the altar of ambition, and health is murdered by devotion to study. Now, with all due respect for education, we think such learning bought too dear. No earthly good can compensate the loss of health. No amount of prosperity, no increase of wealth, no extent of mental cultivation, can possibly repay the loss of health; and it is a fact to be deplored, that, generally speaking, those young females who have had what is called "a good bringing up," who have been "nursed on the downy lap of ease," have had but little exercise, and have devoted most of their time to study, are slender in constitution, delicate in health, and unable to endure fatigue:—while other young females, less favorably circumstanced, who have been obliged to

assist their parents to earn a subsistence, who have had much exercise and but little learning, are robust in constitution and blessed with good health. These considerations suggest the following thoughts:—

1st. School-houses should be roomy and well ventilated.

2nd. Girls should be encouraged to play and romp in the open air, during intermissions and at noon.

3rd. The further girls have to walk to and from school, in reason, the better.

4th. Mothers should see that their daughters take sufficient exercise in domestic employments, both before and after school.

AN OLD FARMER.

Yarmouth, Feb. 15, 1854.

To be continued.

### BLIGHT, MILDEW, AND RUST IN GRAIN.

For the Agriculturist.

Blight according to our ideas, originates from moist foggy weather, and hoar frost. The effect of which when expelled by a hot sun, are first discernible on the straw, afterwards on the ear, in a greater or lesser degree according to local circumstances. Let a field be examined in a day or two after such weather, and a careful observer will soon be satisfied in consequence of what may be called a stoppage of perspiration. This disorder may take place either earlier or later but is most fatal when it appears at an earlier state, and though the productive powers of the plant will thereby be lessened, yet if circumstances are afterwards favourable, the quality of the grain produced may not be much impaired, or it may appear after the grain is fully formed and very little damage except to the straw shall then be sustained. Mildew, again, strictly speaking, may be ranked as a disease which affects the ear, and may be brought on by causes somewhat similar to those which occasion blight, though at a more advanced period of the season; if this disorder come on inmediately after the first appearance of the ear the straw will also be affected, but if the grain is nearly fully formed, the injury on the straw is not much discernible.

Another disorder which affects wheat, and by several farmers denominated the real rust, is brought on by excessive heat, which occasions the plant to suffer from a privation of nourishment, and become sickly and feeble. In this atrophical state a kind of dust gathers on the stalk and leaves, which increases with the disease till the plant is in a great measure worn out and exhausted. The only remedy in this case, and it is one that cannot easily be administered by the hand of man, is a plentiful supply of moisture.

All these different disorders are generally accompanied by insects although not the cause of the disease.

Thin chaffed wheats are thought the only preventive of mildew.

B.



## SAVING ROOTS IN WINTER, CLEANING SEED-GRAIN, &c.

*To the Editor of the Agriculturist:*

SIR,—A portion of live-stock feeding, every winter, being now a branch of revenue which is being increased every season, and pretty generally adopted among farmers in this country, the best method of keeping a large quantity of turnips for that purpose in a sound condition, is a piece of information which I believe would be acceptable to all interested; and while I will not presume to say that I have lighted upon the very best means which could be devised for the purpose, yet, in the absence of more interesting matter, perhaps you may not consider the following remarks unworthy of a place in the *Agriculturist*.

In November '52, I constructed a root-house adjoining a feeding house, on the following plan and dimensions: excavated a pit 6 feet deep, 10 feet wide, and 28 feet long,—dug a drain all round the side, at the bottom of the wall, 2 feet deep and 16 inches wide,—placed cedar posts, cut to equal lengths, in the bottom of the drain, 3 feet apart, from centre to centre, keeping the posts in a straight line about two inches apart from the wall,—filled up the drain with gravel, packing it firmly in about the foot of the posts, put in inch boards all round outside of posts, and filled the inch space between the boards and the wall with gravel. By adopting this method you will see at a glance that the water which will ooze in at the side, in wet weather, would pass through the sand outside of the boards into the gravel drain in which the posts are placed, which again communicates with the drain provided for taking the whole water off. In roofing I used 4-inch scantling for rafters, putting a collar-beam of equal height on each rafter,—sheeted the inside of the rafters and under the collar-beams with inch lumber, and, before putting on outside sheeting for to shingle on, filled the vacant space of four inches, between the inside and outside sheetings, with tanners bark. I thus formed a dry, frost-proof house, which holds 44 waggon loads of turnips at the expense of £3 5s 9d for materials, including the charge for excavating. So far so well, but a terrible evil still awaited my scheme. Although an aperture at each end and one through the centre of the roof had been left for ventilation, a heat, shortly after being housed, sprang up among my turnips, which an outside temperature below zero had no effect in cooling, and, in the course of the winter, all were less or more injured by sprouting, and many were lost by decomposing. With a view of removing this evil, and on the approach of this last winter I made a box spout of inch boards, 9 inches broad, to extend the entire length of the root-house,—bored inch and a quarter holes about six inches apart, on each of the four sides of the box,—first put in about two feet of turnips, then placed the spout on the top in the middle in a horizontal position, with an upright box spout from the chimney way of a chimney through the roof,—and then filled the house brim full. I am glad to say this method proved effectual; at no time throughout the winter was heat perceptible among the turnips—none of them sprouted, and not so much as one

decomposed. In carrying out this principle of central ventilation I believe, with deference, any quantity of turnips which could be put together in the largest space would keep safe and sound. It may, however, be proper to remark that the upright tunnel should be taken out at the end of some four or five weeks and the aperture in the roof which it passed through made frost tight, also, the horizontal spout should be cut in short convenient lengths so that they may be taken out and laid aside as the consumption of the turnips progresses.

I would next respectfully take leave to direct your attention to a recent invention whereby oats, &c., can be effectually extracted from spring wheat, and as the sowing time is approaching perhaps it would be useful to many farmers whose seed is far from clean. Having had the information kindly conveyed last fall to me, by an American gentleman, that a fanning mill was exhibited at the last year's New York State Agricultural Fair, which so thoroughly separated oats from wheat that the exhibitor amused crowds of people by mixing the grain, half oats half wheat, and by once fanning again entirely separated the respective grains. But I regret to say, beyond the fact of this cleaning operation being effected by a tin plate struck full of small holes fastened on a frame to fit the fanning mill, I am not informed. However, I set to work the other week and groped my way to the following very simple and effective method. I made a screen frame to fit the groove in which the smut board is placed, procured a sheet of tin sufficiently large as to fit on the frame,—struck it full of round holes with a steel punch of uniform size, each hole permitting a grain of wheat to drop through lengthways, then tacked the tin to the frame, and having tested the experiment, I have pleasure in saying the success was complete: while the wheat dropped through the holes in the plate, the oats, white caps, &c., glided over the surface. Care, however, must be taken to have the tin surface smooth, to be fitted tight to the frame, with no hollow in the middle, with a strip of wood on each side of the frame so as to guide the grain off it, with the least possible shake on the fanning mill, and to feed in proportion as the wheat drops through the tin screen. But should some of the larger grains of wheat continue to drop over the end of the screen with the oats, it only costs the trouble of putting it through the mill a second time. Again, should any farmer desire to present an unrivalled sample of peas or wheat at show or market, he has only to substitute for the low chess screen a tin plate with holes of the size to keep back the plumpest grain, and he will find the experiment work well.

There are still some small matters connected with farming operations to which I intended respectfully to have drawn your attention, but having already swelled my remarks beyond what I intended, and believing that your patience must be threadbare with what I have already written, shall reserve them until some future time.

I am, sir, your obedient servant,

WILLIAM GORDON.

Whitby, March 3, 1854.

ON GROWING PEAS, &c.

To the Editor of the *Agriculturist*.

DEAR SIR,—It was my intention to have sent you this paper some time ago, but I was prevented by that inveterate enemy of the farmer and thief of time *Procrastination*; but as I have at length proved victorious, I beg leave to send you my method of growing Peas, should you deem it worthy of a place in your valuable publication. I mentioned to you in a former paper that my land is clay. As far as I can form an opinion from the slovenly and negligent manner in which peas are cultivated in this neighbourhood, from sheer want of emulation and passive negligence, I do not wonder that the universal cry is, Peas wont pay; whereas, when grown in a judicious manner there is perhaps no crop cultivated that will leave more remuneration for the labour and expense bestowed, even if they did not prepare the land in a superior manner for a wheat crop. You are aware, that Farmers in Canada are much annoyed or rather injured by the *Pea Bug*; now to prevent injury from that pest, as a strict rule I never sow before the 12th of June, but as soon as possible after that date, but such late sowing will not suit late or long strawed varieties, I therefore sow an early dwarf. My manner of preparing the land for peas is this: if it is turf where Timothy has grown, I plough in autumn, harrow well about the middle of April, let it lie till the first week in June, rib it across and sow after the 12th, harrow lengthways as it has been ploughed, if it is intended for fall wheat, I manure it according to the condition the land is in before I rib it, because I invariably find my wheat give a better return when the manure is applied to the previous crop; again if it is clover, I never plough in the fall, but let my Ewes have the benefit of it a month in lambing time, which gives the lambs a start they never forget all summer, turn them out a month before I intend to plough, and about the 7th of June, I plough down the Clover, which if the land is in tolerable condition may be about a foot high, I turn the furrow pretty well over, let it lie till the 12th, sow and harrow with the furrows, never across. My average crops since I adopted this plan has been over thirty bushels per acre, and of the best quality,—without a single bug; they come off the ground in good time for fall wheat,—and such wheat does always better with me than from naked fallow.

LIVE FENCES.

It is with pleasure I see the subject of live fences brought before the public. I laid out my garden a number of years ago, but could not determine what kind of fence to enclose it with, I had often been struck with the beauty of the native White Thorn, so I at last resolved three years last spring to try them. I accordingly desired my boy when he went to the woods for the cattle, to collect young thorns half an inch in diameter, cut them off and bring the roots home, he soon succeeded in getting enough to fence it round about 14 rods, and I am highly gratified to say, if it continues to grow as it has done for three or four years, I am not the least afraid that

with very little care it will defy the efforts of the most determined depredator of the Swinish multitude to break through it, as well as all other kinds of farm stock; it has the advantage of being cheap and can be got with very little trouble.

VERMIN ON SHEEP.

There is, perhaps, nothing that I have either seen or tried myself attended with so beneficial results in Canada as common whale oil, it effectually destroys the vermin, and at the same time helps the growth of wool, and may be applied at all seasons without any risk. I have enclosed for your consideration an advertisement cut from an old country paper, the *Kelso Chronicle*, which I think would come very properly under the notice of the Board of Agriculture; what an immense benefit it would be in this country where sheep are tormented with flies and vermin of every description. By several letters from many of my old friends they bear witness to the testimony set forth in that advertisement; were the Board of Agriculture to authorize some person to import a quantity of Wilson's Preparation, I have no doubt whatever it would be highly valued by the enterprising flock-masters in Canada. With a desire to benefit those who may read,

Your most obedient servant,

THOMAS STEPHENSON.

Oakland Farm, Warwick.

ON AGRICULTURAL CORRESPONDENCE, &c.

To the Editor of the *Agriculturist*.

SIR,—It is truly said that farmers have no secrets, and that they cheerfully communicate all they know to any enquirer. Whence then the unwillingness of so many of your readers to contribute to your Magazine. I imagine that Government in encouraging Agriculture, has in view the dissemination of useful information; this could be effected by the County Societies forming a Committee of Correspondence in each, who should contribute at least twice yearly to the *Agriculturist* on subjects interesting to Agriculture, distinct from Farmers' Clubs and Lectures. When I referred to Scobie's Almanac, I counted upwards of 360 Townships, and asked if one correspondent could not be found in each. Perhaps, however, the County Societies alone would supply sufficient useful information which could be arranged in something like the following order:

|            |                                     |
|------------|-------------------------------------|
| Brant,     | } County Societies to contribute in |
| Carleton,  |                                     |
| Essex,     |                                     |
| Lambton,   | } In February and August,           |
| Frontenac, |                                     |
| Lenox,     |                                     |

and so on with the other Counties. There being upwards of forty counties, three or four communications would be received monthly, which might be sufficient, with other occasional original letters, for publication. Only set this in motion, a vast deal of information that is now locked up would



be circulated, and a well related anecdote now and then enliven our Bushmen. I remember once reading in the old *Farmer's Journal*, that a farmer in Wiltshire had ten sheep go astray, and he desired the Parish clerk to give notice of his loss in church, which was done as follows: "Mr. —, has lost ten sheep, five are Nott sheep and five are not Nott sheep." In Wiltshire, the horned and hornless sheep are called Notts and Polls.

It may be deemed presumptuous in a labourer to address you, I hope, however, that in future my betters will shoulder me out, my poverty of language hardly enables me to express my thoughts intelligibly, for like the soldier officer, who when he was appealed to concerning books, replied, "Pon honor never read but two books in my life, the Bible and the Articles of War," so with me my reading has been very limited.

Mr. Hind in his Lecture on Agricultural Chemistry, recommends salt to be mixed with plaster for land, but he gives no authority for our guidance. In a lecture too, published last year in the *Agriculturist* the same is suggested, but the result of no experiment is given. In the old country, I know only of two trials of salt to land, one decidedly improved the straw and grain, and the other the straw only. It has been constantly dinned into the farmer's ear, that with a little extra pains the crops could be made to produce four and five bushels per acre more than is now done. This is to me sickening, since but for the rust it could be more than done on many farms. With me the question is, cannot a preventive against the rust be found in salt—if bright straw could be grown one might be certain of having good wheat. What I have read of salt also, has tended to confirm my opinion that it would. Unluckily for me I must leave this for my betters to decide.

In England it is said that 40 bushels per acre would make the land unproductive for many years; in Canada, the quantity I have known applied to a bed of thistles without injury to the following crop of grain would appear fabulous were I to state it, and it has led me to think that there is a vast difference in the qualities of Onondaga and European salt, or that it is a vulgar error to suppose that a large quantity per acre would act as a poison. I know that manganese, or lime if applied in a quantity exceeding sixty bushels would do it. That salt suits mangel wurzel I have the authority of a Farmers' Club in England. At a meeting of the Petworth Club, a Mr. Boxall stated that having some farm students he encouraged them to experiment,—that on a field intended for mangel wurzel, part of it was dunged and part salted, and that the crop from the latter averaged the weight per acre grown on the former.

In the new testament we read "if the salt lose its savor." Now, I always understood salt to be indestructible. I will thank you to interpret the above.

I will thank some correspondent for a remedy for the distemper in swine.

A LABOURER.

#### SCRAGG'S TILE MACHINE.

To G. BUCKLAND, ESQ., *Professor of Agriculture, Secretary of the Board of Agriculture, &c.*

MY DEAR SIR,—You are already aware, that I was authorized last fall to make a short tour of examination in the neighbouring State, and elsewhere in the Union if I should think expedient, for the purpose of reporting to the Minister of Agriculture any facts that might be deemed worthy of his notice, with a view to action by him, through the Bureau or Boards of Agriculture, for the advancement of our agricultural interests. The result of my mission, which occupied but a few days, was a brief report, communicated to the Minister of Agriculture, and not yet printed. There is one subject—a Drain Tile Machine—to which I have called the attention of the Minister, which your Board has also had under consideration. As some of my enquiries were made at your suggestion, it may not be unserviceable to extract a few passages from my Report for the information of yourself and the members of your Board. I hope Mr. Charnock, the gentleman who has established himself at Hamilton, and who purposes to manufacture Tile Machines of a superior kind, will be successful; but it may nevertheless be proper that the Board should ascertain the price, character, and capabilities of the machines now in operation in the adjoining State, before granting public aid or entering into permanent arrangements. A good Tile Machine in operation is a desideratum in this part of the Province, and one which I fear will not be supplied, for some time at least, without direct public encouragement. When the demand for drain tiles shall become more urgent, from a stronger and more general conviction of their utility, the manufacture will be undertaken without other stimulus than the ordinary one of certain profit.

By submitting the facts mentioned in the extract herewith, to the Board of Agriculture at its next meeting, you will much oblige,

Your obedient servant,

WM. McDOUGALL.

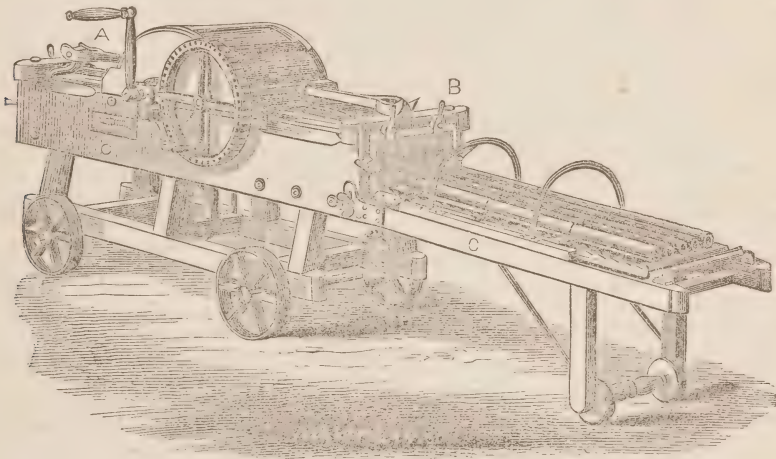
Toronto, March 17th, 1854.

*Extract from Report to Hon. J. Rolph, Minister of Agriculture, &c.*

"The U. C. Board of Agriculture, as you are aware, have already had the subject of Drain Tile manufacture under consideration, and have offered a premium to the person who shall first put in successful operation in U. Canada a good Tile Machine. At the suggestion of Professor Buckland, Secretary of

the Board, I called upon J. Delafield, Esq., of Geneva, N. Y., the gentleman who introduced the first efficient Tile Machine into that State, and obtained from him much useful information on that and other subjects. Mr. Delafield (since dead) is President of the Agricultural College recently chartered by the N. Y. State Legislature, which is about to commence its operations under most favourable auspices. In 1848 Mr. D. imported from England at his own expense one of Scragg's Tile Machines, and placed it in the hands of a Potter near Geneva, upon such terms as induced him to undertake the manufacture of Drain Tiles at a reasonable cost. Mr. D. himself became a customer for a large quantity and thus set an example to his neighbors. I saw this machine in operation, and was informed by the proprietor that although attempts had been made to copy and improve it, yet he preferred the imported machine, and had ordered a new one to be constructed exactly like it. The machine costs about £50, is very simple in its construction, and not liable to get out of order.

The clay is the same as that ordinarily used by common potters, and is prepared by a Pug Mill in the usual way. It is then put into the machine and by the motion of a crank (turned by one man) is forced through moulds which give the desired shape to the tiles. With ordinary attendance about 3000 two inch pipe tiles are turned out daily. The machine is capable of producing a much larger quantity, but 3000 is the limit as it is now worked. I visited a Tile factory at Albany, in which a machine constructed on a different plan (also imported from England) is used. But judging from the appearance of the Tiles, and from the opinions of several gentlemen who have taken much interest in the subject, I believe the machine at Waterloo (near Geneva) is to be preferred. Professor Wilson gave me the names of the principal machines now used in England, and he mentions Scragg's as one of the best. I procured a cut of this machine which will better enable you to judge of its simplicity, &c.



SCRAGG'S TILE MACHINE.

The clay is put into the machine at *a*. After passing through a set of screens which remove all the small stones and gravel, it is subjected to the action of rollers to give it a due consistence. It is then forced through the dies at *b*, and along the receiving table *c*, which is composed of canvass placed on rollers so as to move with the tiles. The semi-circular wires descend at the proper moment and cut the tiles to a uniform length. They are then carefully removed to drying shelves until ready for the kiln. Mr. Wartenbury, the manufacturer, informed me that the burning process was not more difficult than in the case of common pottery, but that some experience was necessary to prevent a large per centage of loss.

Before the introduction of this machine Drain Tiles cost Mr. Delafield and others in Seneca county from \$20 to \$25 per thousand. They are now produced for \$9 per thousand. I obtained the following particulars of the expense of under-draining in the neighbourhood of Geneva, both before and after the introduction of the Tile Machine.

Before the Tile Machine was put in operation the cost of thorough draining per acre, with drains 33 feet apart, which would require 91 rods of drain, was

stated by Mr. Delafield in an elaborate report to the State Agricultural Society, as follows:—

|                                           |         |
|-------------------------------------------|---------|
| Tile, small size, 20 cents per rod, ..... | \$18.20 |
| Cutting trench, laying, &c., 18c, " "     | 16.38   |

|                       |         |
|-----------------------|---------|
| Cost per acre, .....  | \$34.58 |
| Or, 38 cents per rod. |         |

The cost of making a common stone drain, the stone being on the field to be drained, he stated as follows;—

|                                                              |        |
|--------------------------------------------------------------|--------|
| Man and team per day, hauling enough for about 5 rods, ..... | \$1.50 |
| Cost of laying at 6c. per rod, .....                         | 30     |
| Cost of trench, &c., 18c. do. ....                           | 90     |

|                                  |        |
|----------------------------------|--------|
| Cost of 5 rods stone drain, .... | \$2.70 |
|----------------------------------|--------|

Or, 54 cents per rod, showing a difference of 16 cents per rod in favor of the tiles, even when manufactured by hand. An acre with drains 33ft. apart requires about 1320 twelve inch (in length) tiles. The present cost, Mr. Delafield informed me, is about 20 cents per rod, the tiles costing \$9 per thousand at the manufactory."



## Agriculture, &c.

### THE EXHAUSTIVE SYSTEM.

The following remarks of an American writer, upon the wasteful system of cultivation so generally prevalent in the older states of the Union, will apply with equal force to many parts of Canada:—

"Young men, observing the exhaustive effects of imperfect tillage, suppose that the agricultural profession, instead of being an open field for the efforts of science to improve, is but an arena fit only to be occupied by the illiterate, under the guidance of tradition. So they press in masses into other callings, leaving the old homesteads with disgust.

"We are also told that the same process of deterioration, which has been so nearly completed in the Atlantic States, is going on at the West. Although nature by a long and most liberal process has endowed the lands of that section with a fertility elsewhere unknown, still they can be impoverished by the hand of man. The gradation to the same climax which has obtained in the older States may be slower, yet, in the nature of things, it must be sure. Many of the occupants of those now generous soils, under the same mistaken impression that they are inexhaustible, which possessed the first settlers of the more fertile tracts of the Eastern States, will probably live long enough to find that, under a constantly depleting and careless husbandry, what has been done can be done again. These remarks are of course subject to exceptions; but they are still quite too generally true.

"While this rapid destruction of fertility has been going on among us, several of the States of Europe have been as rapidly advancing in productiveness. There agriculture is fostered and encouraged by Government; men of the first attainments, and in the highest walks of life, devote their time and talents to its improvement; the light of several sciences has been shed upon it; lands have been so changed within seventy years past by a judicious rotation of crops, and a system of manuring adapted to the soil and the crop, as to increase threefold in productiveness; thousands of acres of wet lands, hitherto of little or no value, have been drained, and are now under profitable cultivation; agricultural schools and colleges have been established; and the breeding of agricultural animals has been carried to so high perfection in England and Scotland, that any other breeds in the known world, may be improved by a cross with them.

"It may be said that such high cultivation cannot be profitable here. Neither can we afford to pursue our exhausting system of cultivation much further; for the decreased and decreasing crops will not remunerate our labour. If the state of thing in our country will not warrant high farming, to the extent to which it is now carried in the countries spoken of, we certainly are warranted in the employment of far more enlightened and correct principles of tillage than are now common.—*New England Cultivator.*

## FARM-YARD MANURE—ITS MANAGEMENT AND APPLICATION.

BY A PRACTICAL FARMER.

"Where there's muck there's money."

The old adage quoted above is certainly a true one as applied to Agriculture. "Muck is the mother of money," is another homely maxim; and these are verified by the experience of every good farmer; good muck produces great crops; great crops produce much manure; much manure will produce more crops and in great variety; and so improvement goes on indefinitely. It is with the view of urging closer attention to the making, preservation, and application of farm yard manure that I now make a few suggestions.

**The Fold Yards.**—These should be surrounded by the farm-buildings, or, if open on any side, they ought to be on the south. The bottoms should be close and compact, so as to prevent subsoil absorption of the liquid manure, and in form somewhat concave or "dishing." The buildings must all be spouted to carry off surplus rains, otherwise the yards form cisterns for them to drain into. The more shed or hovel covering the yard possesses the better, as the manure is always most valuable where made under cover. To cover every farm-yard is impracticable, but much might be said in favor of such an uncommon innovation upon old wedded customs.

**The Making or Manufacturing of Manure.**—The design and aim should be to make as much as possible from every kind of product of the farm, and to make it good. For this purpose every article of vegetable matter that can be collected from the farm should be brought to the fold yard to be there converted into manure—nothing burnt, nothing wasted; even the very twitch itself forms a profitable foundation for the yard accumulations; all ditch-roadings, hedge-trimmings, road-scrapings: strawy matters all sorts, must come to the fold-yard. The harvesting of every crop ought in some measure to be guided by the requirements of the fold-yard. A corn crop mown and stacked in its usual undiminished state will produce much more manure than if reaped, and the stubble is left for an unlimited period to rot and decay; it begins to lose bulk the moment it is cut.

**To Make it Good.**—The straw should be very carefully and with great regularity given to the yard stock, and in its consumption should invariably be with a liberal allowance of corn, cake, turnips, and other roots: the more stock and the more artificial food they consume, the better for the manure. Other aids may be applied to enrich the heaping mass—such as night soil, town sewage and the like; sea-weed; fish of various sorts (particularly shell fish): the latter not only enriches the manure, but provides a small supply of calcareous matter for soils requiring it.

**Its Preservation.**—This growing mass should be left undisturbed (except its daily but partial stirring by the stock of pigs in search of the stray grains or the refuse turnips of the cattle) till near the time when it is required for use. About

a month or six weeks before it is used it should be all turned over very systematically in layers about four feet wide, and in small, well separated fork-fulls; the whole surface or top to be carefully levelled to prevent undue exhalation of its ammoniaical particles. In about six weeks the amalgamated mass will be in the best possible state for application to the soil, *i. e.*, it will be in its richest, most unctuous state of semi-decay, yielding ammonia for the soil to promote fermentation, and a highly nutritious supply of food for the crop to be grown. It is, however, in many cases absolutely necessary to lead considerable quantities of the fold-yard manure to the distant fields of the farm in the winter season, to be in readiness for the turnip sowing, or other purposes. This is attended with much waste of manure; but, to make the best of it, these heaps should always be made by the carts being drawn upon them to deposit the manure, and to compress them as closely as possible to prevent exhalation. In order to fix the ammonia in these heaps, they should always be sown profusely with gypsum as the leading proceeds; if this cannot readily be procured, a similar application of soot will answer nearly as well. As soon as a heap is finished, it should be rounded up and slightly covered with soil almost immediately.

*Its Application.*—The most judicious and profitable application of farm-yard manure is to promote the production of root crops and pulse crops. It is comparatively inapplicable to the production of a corn crop on most soils, but on every soil it aids surprisingly the progress of both root and pulse crops. As a top-dressing for grass seeds or clovers it is very serviceable; but its chief value is obtained when applied to produce a root crop. A good root crop is the foundation of good husbandry—the forerunner of every other crop; it is the substance of good farming. A good root crop, *i. e.*, turnips, mangold wurzel, coleseed, or the like crop, produces much food; this produces much manure; and, not only undiminished but enhanced fertility is the result.—Potatoes are extensively grown, and are a profitable root crop, but when sold from the farm are certainly an exhausting crop; but if consumed thereon, the produce is returned for the most part to the soil in the manure, minus the pork; and, like other roots, the returns are minus the mutton and beef, and also the carbonic acid gas emitted by the stock in consumption. The pulse crops are much benefited by dressings of farm-yard manure; and being tap-rooted they draw much of their food from the subsoil, and leave a considerable proportion of the dressing for the succeeding crop. I would here observe that it should invariably be applied to the soil in the richest state of semi-decay to which it can be brought, and it ought to be ploughed in at the time of application.

*To the Root Crop.*—Every root crop ought to have a well-pulverized and prepared soil—the finer the tilth the better chance for the early progress of the seeds. The mangold wurzel, the Swedish turnip, the coleseed; to which I may add, the varieties of the cabbage crops, should be put in upon the ridge system—the ridges to

be from twenty-four to twenty-seven inches apart. This is the very best mode of applying farm-yard manure; the deposit of the manure and the ploughing in may go on so simultaneously that none need be exposed to atmospheric influences beyond the hour; and rolling the ridges should take place immediately. Thus every portion is covered; it is thoroughly compressed into the mouldy soil precisely under the line for the deposit of seed, and, like a hot-bed it quickly produces vegetation; the plants soon strike their roots into the line of manure beneath and are at once out of danger and rapidly flourish. The varieties of common turnip, carrot, potatoes, &c., are best put in “on the flat.” In manuring for these crops the greatest care should be taken to plough in the manure as speedily as possible after it is laid on the land and spread; and it should further be put at the bottom of every furrow as the ploughing proceeds, by lads following the ploughman. Rolling to be done as for ridges, and be drilled or set without harrowing. For grass seeds or clovers the manuring may take place at any convenient and suitable time during the winter, and ought to be well brushed in immediately. If applied to the production of corn crops, I can only say the sooner it is ploughed in the better.

*Quantity.*—This must depend upon the fertility of the soil, and the supply of manure on hand. To produce first-rate crops, the mangold wurzel, the Swedish turnip, the potatoe, the carrot, and the cabbage crops will require from 15 to 18 good two-horse cart loads per acre; the coleseed and the common turnip crops will require from 10 to 14 such loads; the grass seeds or clovers from 8 to 10 loads; and the corn crops from 8 to 12 loads.

The exposure which farm-yard manure is subjected to in many districts, both in the field and in the heap cannot be too strongly deprecated: it is thus often rendered valueless—not a whit better than rotten stubble, nor worth the cost of laying on the field. In such management, and for such managers, we may reverse our motto, and say—Where there is *no* muck there is *no* money.—*Mark Lane Express*,

*SHELTERING MANURE.*—Stable manure kept under shelter, and properly mixed with absorbing substances, muck leaves, straw litter, &c., is of much greater value than when exposed in the open yard. An analyses made at the English Agricultural College, shows that it contains more than double the quantity of nitrogenized matter, and the same of salts containing organic and inorganic matter, soluble in water; while of potash and soda, the unsheltered manure retains only .08 per cent., and the sheltered *two* per cent.

*STABLING STOCK.*—An exchange says, when farm stock is kept in well littered stalls, and every other judicious means taken to manufacture manure, one head will produce sufficient to keep an acre of ground in the highest state of fertility. We know this from experience.



## Natural History.

### THE OX.—HISTORY, MANAGEMENT, &c.

We have published about fifty pages of Mr. YOUATT's excellent and standard work on cattle and shall continue our extracts during the remainder of the volume. No better or more reliable information as to the origin, character,

and merits of the different breeds of cattle, could be presented to our readers. The subject, moreover is one with which every farmer ought to be familiar, and we trust that our efforts to make it so will not prove unacceptable. We have procured from New York the principal cuts employed to illustrate the original work, and give below those which ought to have appeared in the March number.



HEREFORD COW.

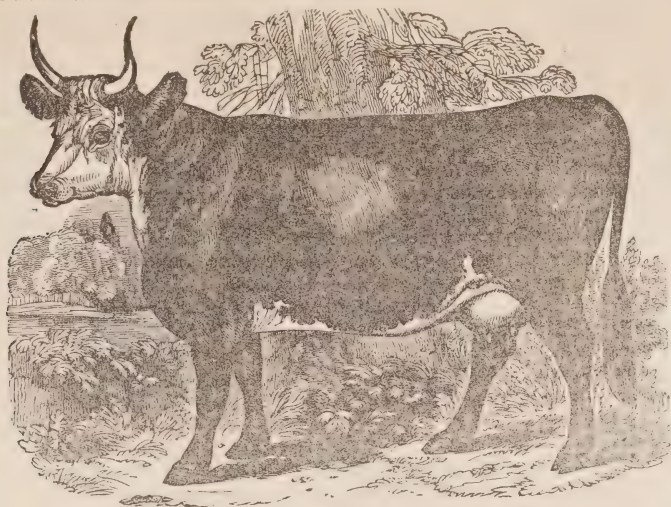
The above cut should have been given on page 81, where the reader will find everything of importance in the history of this admirable breed. We have often wondered that the Here-

fords have not been more generally introduced into Canada. Our correspondent, W. H. Sotham, has frequently brought them under the notice of our readers.



THE SUSSEX COW.

The above should have appeared on page 82, of last number.



GLAMORGAN COW.

If the reader will turn to page 83, he will find the Glamorgans fully described.

### THE MIDDLE HORNS.

(Continued from last number.)

#### SCOTLAND.

Scotland contains several distinct and valuable breeds of cattle, evidently belonging to our present division, "The Middle Horns."

The West Highlanders, whether we regard those that are found in the Hebrides, or in the county of Argyle, seem to retain most of the aboriginal character. They have remained unchanged, or improved only by selection, for many generations; indeed from the earliest accounts we possess of Scottish cattle.

The North Highlanders are a smaller, coarser, and in every way inferior race, and owe the greater part of what is valuable about them to crosses from the Western breed.

The North-Eastern Cattle were derived from, and bear a strong resemblance to, the West Highlander, but are of considerably larger size.

The Ayrshire breed are second to none as milkers.

The Galloways, which scarcely a century ago were middle-horned, and with difficulty distinguished from the West Highlanders, are now a polled breed—increased in size, with more striking resemblance to their kindred, the Devons—with all their aptitude to fatten, and with great hardness of constitution.

#### THE WEST HIGHLAND CATTLE.

The cattle on the islands on the Western coast have the honor of being, or, at least, of retaining the character of the primitive breed, and whence are procured the purest and best specimens to preserve or to improve the Highland cattle in other districts.

Skirting the coast from the promontory of Cantire to the northern extremity of Scotland, is a range of islands—the Hebrides, about half of them inhabited by man.

Little is known of the history of the Hebrideans except that they descended from the same stock

with the Irish and Highlanders; and, at no very remote period, the inhabitants were singularly uncultivated, ignorant, idle, and miserable.

After the union between the English and Scottish kingdoms, and when civilization had commenced on the mainland, the Hebrideans began to be reclaimed, and that was chiefly manifested in, and promoted by, a change of occupation. Although they did not abandon their seafaring life, they began to be agriculturists. Their cattle, which had been totally neglected, and their value altogether unknown, retained their primitive character. The Hebrideans for the first time became aware of this, and they bred them in great numbers, and a few of the most intelligent farmers endeavored to improve them by selections from the best specimens of their native stock; the result has been, that the breeds of some of these islands now bear the highest price among the Highland cattle.

In a group of islands, extending nearly two hundred miles from north to south, there will be considerable difference in the character and value of the breed; but through the whole of them the striking peculiarities of the Highland cattle are evident. The principle difference is in the size, and in that the cattle of the southern most island, Islay, claim the superiority. This island is sheltered by its situation from the storms to which most of the others are exposed, and the pasturage is better; the cattle are earlier ready for market, and attain a greater weight. This increase of size would not be of advantage on the northern islands, or even on the mainland—the cattle, deprived of a portion of their hardihood, would not be proof against the inclemency of the weather, and would starve on such scanty forage as the Highlands in general supply. Breeders are so much aware of this, that they endeavor to preserve and improve the value of the pasture is kept as much as possible in eatable condition, that is, neither eaten too bare, nor allowed to get too rank, or to run into seed.



their stock, by selecting, not from the districts where the size has increased, but, by almost general consent from the Isle of Skye, where the cattle are small, but are suited to the soil and climate; and can be most easily and securely raised at the least expense; and, when removed to better provender, will thrive with a rapidity almost incredible.

The origin of the term *Kyloe* is obscure, but is said to be a corruption of the Gaelic word which signifies *highland*, and is pronounced as if spelt *Kael*.

The Highland bull, or *kyloe*, should be black, or pale red, the head small, the ears thin, the muzzle fine and rather turned up. He should be broad in the face, the eyes prominent and the countenance calm and placid. The horns should taper finely to a point; and, neither drooping too much, nor rising too high, should be of a waxy color, and widely set on at the root. The neck should be fine, particularly where it joins the head, and rising with a gentle curve from the shoulder. The breast wide, and projecting well before the legs. The shoulders broad at the top, and the chine so full as to leave but little hollow behind them. The girth behind the shoulder deep; and the back, straight, wide, and flat; the ribs broad, the space between them and the hips small; the belly not sinking low in the middle; yet, on the whole, not forming a round or barrel like carcass. The thigh tapering to the hock-joint; the bones larger in proportion to the size than in the breeds of the southern districts. The tail set on a level with the back.—The legs short and straight. The whole carcass covered with a thick, long coat of hair, and plenty of hair also about the face and horns, and that hair not curly.

The value of the West Highland cattle consists in their being hardy and easily fed; in that they will live and sometimes thrive, on the coarsest pastures; that they will frequently gain from a fourth to a third of their original weight in six month's feeding; that the proportion of offal is not greater than in the most improved larger breeds; that they will lay their flesh and fat equably on the best parts; and that, when fat, the beef is close and fine in the grain, highly flavored, and so well mixed or marbled, that it commands a superior price in every market.

Forty years ago, the treatment of cattle was, with very few exceptions, absurd and ruinous, to a strange degree, through the whole of the Hebrides. With the exception of the milch cows, but not even of the calves, they were all wintered in the field; if they were scantily fed with hay, it was coarse, and withered, and half rotten: or if they got a little straw, they were thought to be well taken care of. The majority got little more than sea-weed, heather, and rushes. One-fifth of the cattle, on an average, used to perish every winter from starvation. When the cold had been unusually severe, and the snow had lain long on the ground, one half of the stock has been lost, and the remainder have been thinned by the diseases which poverty had engendered.

It proved the excellency of the breed, that in the course of two or three months, so many of

them got again into good store condition, and might almost be said to be half-fat, and could scarcely be restrained by any fence; in fact there are numerous instances of these cattle, which had been reduced to the most dreadful state of impoverishment, becoming fattened for the butcher in a few months after being placed on some of the rich summerpastures of Islay, Lewis or Skye.

The cows were housed during the winter; the litter was never removed from them, but fresh layers of straw were occasionally laid down, and so the floor rose with the accumulation of dung and litter, until the season of spreading it upon the land, when it was taken away.

The peculiarity of the climate, and the want of inclosed lands, and the want, too, of forethought in the farmer, were the chief causes of this wretched system of winter starvation. The rapidity of vegetation in the latter part of the spring is astonishing in these islands. A good pasture can scarcely be left a fortnight without growing high and rank; and even the unenclosed and marshy and heathy grounds, are comparatively luxuriant. In consequence of this, the farmer fully stocked, or over-stocked, even this pasture. He crowded his fields at the rate of six or eight beasts, and even more, to the acre. From their natural aptitude to fatten, they got into tolerable condition, but not such as they might have attained. Winter, however, succeeded to summer: no provision had been made for it, except for the cows; and the beasts that were not properly fed even in the summer, languished and starved in the winter.

The Hebrides, however, have partaken of that improvement in agriculture of which we shall have frequently to speak when describing the different districts of Scotland. In the island of Islay, the following is the general system of management among the better kind of farmers, and the account will apply to the Hebrides generally, and to Argyshire.

The calves generally are dropped from the 1st of February to the middle of April. All are reared; and for three or four months are allowed to suck three times a day, but are not permitted to draw any great quantity at a time. In summer all the cattle are pastured; and the calves are sent to their dams twice a day, and the *strippings*, or the last part of the milk, is taken away by the dairy-maid. The calves are separated from their dams two or three weeks before the last cows are sent to the cattle-tryst at the end of October, the greater part of them being driven as far as the Lowland districts, whence they gradually find their way to the central and southern counties of England.

The calves are housed in the beginning of November, and are highly fed on hay and roots (for the raising of which the soil and climate are admirably adapted) until the month of May.—When there is plenty of keep, the breeding cows are housed in November, but in general they are kept until three or four weeks before calving. In May the whole cattle are turned out to pasture and, if it is practicable, those of different ages are kept separate; while, by shifting the cattle,

In the winter and the spring all the cattle except the breeding cows are fed in the fields; the grass of which is preserved from the 12th of August to the end of October. When these inclosures become bare, about the end of December, a little hay is taken into the field, with turnips or potatoes once or twice a day, according to the circumstances, until the middle or end of April. Few of the farmers have these roots to give them, and the feeding of the out-lying cattle with straw is quite abolished. If any of them, however, are very materially out of condition, they are fed with oats in the sheaf. At two or three, or four years old, all except the heifers retained for breeding are sent to market.

There is no variety of breeds of cattle in the Hebrides. They are pure West Highlanders. Indeed it is the belief of the Hebridean farmer that no other cattle will thrive on these islands, and that the Kyloes could not possibly be improved by being crossed with any others. He appeals to his uniform experience, and most correctly so in the Hebrides, that attempts at crossing have only destroyed the symmetry of the Kyloes, and rendered them more delicate, and less suited to the climate and pasture.

By selection from the choicest of the stock, the West Highlander has been materially improved. The Islay, the Isle of Skye, and the Argyshire beast readily obtains a considerable higher price than any other cattle reared in the Highlands of Scotland. Mr. McNeil has been eminently successful in his attempts to improve the native breed. He has often obtained £100 for three and four-year-old bulls out of his stock; and for one bull he received £200. He never breeds from bulls less than three years, or more than ten years old; and he disapproves, and rightly in such a climate, of the system of breeding in and

in. He also adheres to that golden rule of breeding, the careful selection of the female; and indeed it is not a small sum that would induce the Hebridean farmer to part with any of his picked cows.

It will be concluded from what we have said of the milking properties of the Kyloe, that the dairy is considered a matter of little consequence in the Hebrides; and the farmer rarely keeps more milch cows than will furnish his family with milk and butter and cheese. The Highland cow will not yield more than a third part of the milk that is obtained from the Ayrshire one at no great distance from the main land; but that milk is exceedingly rich, and the butter procured from it is excellent.

Oxen are never used for the plough, or on the road, on any of the Hebrides.

We have stated that more than 20,000 of the Hebridean cattle are conveyed to the main-land, some of which find their way even to the southernmost counties of England: but, like the other Highland cattle, their journey is usually slow and interrupted. Their first resting-place is not a great way from the coast, for they are frequently wintered on the coarse pastures of Dumbartonshire; and in the next summer, after grazing awhile on the lower grounds, they are driven farther south, where they are fed during the second winter on turnips and hay. In April they are in good condition, and prepared for the early grass, on which they are finished.

Many of these small cattle are permanently arrested in their journey, and kept on the low farms to consume the coarse grass, which other breeds refuse to eat; these are finished off on turnips, which are given to them in the field about the end of autumn and they are sold about Christmas.



THE WEST HIGHLAND COW.

In the Outer Hebrides the black cattle are small but well proportioned, and on the tackmen's farms they are generally of good breed, and, although not heavy, very handsome. They are covered with thick and long pile during the winter and spring; and a good pile is considered one of the essential qualifications of a cow.—

The most common colors are black, red, brown, or *branded*, (that is, a mixture of red and brown in stripes—*brindled*.) A whitish dun color is also pretty frequently seen. The breed of black cattle has been greatly improved of late years, by the importation of bulls and cows from various parts of the Highlands.



## Editorial, &c.

G. BUCKLAND, Esq., EDITOR.

H. THOMSON, Esq., ASSISTANT EDITOR.

### HINTS FOR THE MONTH.

Field operations,—ploughing, sowing, &c., may sometimes be commenced in the western portions of Upper Canada, in the earlier part of April, but as a general rule not till the latter half of the month, and very rarely, in extremely backward seasons, not till the first of May.

The first part of April will, or should be occupied in thoroughly finishing up the winter's work, looking after the sheep and cattle, repairing fences where required, and in getting all things, *i. e.*, implements, harness, seed-grains, &c., in complete readiness for putting the seed into the ground so soon as the season is sufficiently advanced.

One of the first matters requiring the Farmer's attention when the frost leaves the ground, will be an examination of his wheat fields, in order to discover if any of the drains have become obstructed by the winter's frost, and if so, to open them out with the spade, and give free outlet to all the surface water.

As the getting a good growth of clover and grasses, is one of the most important objects in farm-husbandry, and as it very frequently happens that the best intentions in view of this result are attended by failures, it becomes very desirable to learn the most probable means of insuring success. The first thing necessary is to obtain sound and clear seed, and if this be secured, about 10lbs. of clover and timothy mixed, say 6lbs. of the former, and 4 of the latter per acre will be sufficient. We have known on new land 3lbs. of clover give an ample growth, but it is safer always to sow liberally. If intended to sow the seeds on winter wheat, experience has shown that, on clay lands there can scarcely be a better plan than to sow in early spring, just as the winter's snow has nearly left the ground. The seed settles into the cracks of the honey-combed surface, with the melting snow, and as the particles of soil crumble down it gets well covered, and germinates before the wheat plant shades the ground so much as to keep it down

altogether. The above will be found the best plan on clay soils, when there is a thick growth of the wheat plant; if the latter is somewhat thin, it may be advisable to defer sowing the seeds till the beginning of May, or till the ground is sufficiently dry to admit the use of a light harrow or roller. On sandy soils, the best method is probably to sow as soon as the ground is dry enough to allow the roller to be used upon it. With spring grain clover may be sown after the last harrowing given the grain, and covered either with a very light harrow, roller, or brush, or may be sown as is frequently done when the grain is a few inches in height, and rolled.

Spring wheat is not now much sown, except in the back townships, and in consideration of the uncertainty of the crop, and the inferior price it brings, few farmers whose land will produce good fall wheat would think of sowing spring varieties. Circumstances, however, occasionally render it convenient to sow a portion of the farm with this grain, and in such cases, it is always found the best plan to sow as soon as the ground is dry enough to allow the plough and harrow to be used freely, or to bear the horses firmly. This in ordinary seasons, in Western Canada, will be from the 15th to the 25th of April, and the grain may then be sown, on land that has been well ridged up and surface drained the previous autumn, without any further ploughing. Soil treated in this way is so finely pulverized by the winter's frost that it forms an excellent seed bed, and if sown and harrowed in at the right moment, it retains a sufficient degree of moisture during the summer. There may be cold or harsh weather, after the early sowing of a field of spring wheat, and the farmer may fancy that his labor is premature, but he will find that the seed has been germinating all the time, and with the first return of genial warmth, it will be up, and shading the ground well before there can be any fear of too dry weather setting in. Unless this crop be sown in good time, there will be but little chance of a remunerating return. But the farmer must wait patiently till his field has got into good working condition before he attempts to sow. His labor will have a very unsatisfactory result, if he does otherwise. And after sowing, the dead furrows and cross drains, should

be opened out, with almost as much care as for winter wheat.

Barley is also an early sown crop in this portion of Western Canada, and may likely be sown to advantage on good clean land that has been ridged up the previous fall, without further ploughing in spring. Many farmers, however, contend for a somewhat late sowing of this crop, and for ploughing the land several times in spring, and we have known this method sometimes attended with successful results, but experience has generally shown that early sowing, that is, as soon as the earth and the air have attained a kindly dryness and warmth, has been followed by the finest sample, and the greatest number of bushels per acre.

The remaining crops, which will require the farmer's attention during this month, are peas and oats, both of which require good and clean land, and considerable care, to insure good returns. Of late years the *Bug* has been destructive to the pea crop. It has been recommended as a precaution against this insect, to sow peas of two years previous growth, when the bug would have disappeared from the seed. A correspondent in another column recommends sowing an early dwarf variety in June. Oats, it is well known, are apt to degenerate in weight in this climate. Care is therefore requisite in the selection of the best quality of seed. A liberal quantity, say three to four bushels should be sown per acre, and on good strong land.—Peas and oats do well on sward, ploughed up either in spring or autumn, and sown in good season.

In addition to the crops above mentioned, if the farmer sows in April an acre or two of tares mixed with rye or oats for his horses and cattle, when grass is short, he will do well. Potatoes, Indian corn, turnips, &c., may be thought of in May. The season may be such indeed that many farmers may not be able to sow an acre of any kind till the beginning of May. But as an instance in point, as to the time in which spring crops may be sown in Upper Canada, we have known a farmer in the Township of York, who never failed for many years in getting the whole of his field crops sown before the close of April.

AGRICULTURAL INFORMATION.—SALT AS A MANURE.

The suggestions of our correspondent under the signature of a *LABORER*, relating to the supplying of the *Agriculturist* with important practical information from all parts of the Province, will, we trust, receive due attention by those whom it now immediately concerns. Something of the sort we have for a long time desired. If each society would send us some brief information only once a year, our pages would soon indicate the state, progress, and wants of Agriculture throughout the extensive and diversified range of Upper Canada.

There can be no doubt that in a country so far removed from oceanic influence as is this section of the Province, that salt is not only a very necessary condiment for cattle, but that it exercises a fertilising influence upon the soil. This substance is the only compound from which plants can readily obtain chlorine, an element which enters more or less generally into their composition. Salt is found to sweeten pasturage, and to give both brightness and stiffness to straw, and to assist in filling the grain. It has been found useful, applied in small quantities, to the compost heap. It can have no influence in fixing the Ammonia, but by arresting decomposition it may retard the formation of that valuable compound, till it be required by the wants of the growing plant. The application of salt to manure heaps intended for immediate action, as in the case of turnips, for example, we should think quite objectionable. In such cases it would tend to impede the solution of those ingredients for which the young plants have large and imperative wants. A dressing of salt on Mangel Wurzel, Asparagus, and other plants, particularly in high situations remote from the sea, has been found highly beneficial. Care should be taken not to apply it to growing crops in too large doses, or it will have a parching effect on the young plants, causing their leaves and stems to wither and decay. A strong solution of salt poured upon grass has this effect, but the rains of autumn will restore the plat to an unusual verdure, and the sweetness of the herbage will be found particularly grateful to cattle.



The passage in the New Testament, (Matt. v. 13.,) mentioned by our correspondent, refers to rock salt, which by exposure to air and water would become more or less deprived of its saltiness. We are informed by travellers, that in Palestine an impure, earthy rock salt is sometimes to be seen on the abrupt side of a hill, and that the material is employed for making roads, "trodden under foot." Maundrell, an old traveller and accurate observer, speaking of the exposed rock salt of Palestine, observes:—"I broke a piece of it, of which, that part that was exposed to the rain, sun and air, though it had the sparks and particles of salt, yet it had perfectly lost its savour."

The American salt is not generally, we believe, so pure and strong as the English; and the impurities which it contains are frequently prejudicial to the curing of meat and the making of butter and cheese. Salt of the purest and best quality must be employed in these operations, in order to obtain articles of the most approved kind and flavour.

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#### THE JAPAN PEA.

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We have heard a good deal lately about a new leguminous plant, said to come from seed brought from Japan.

Mr. Teschemacher, an American writer, gave a description of the plant, which he calls *Cajanus bicolor*, a native of East Indies, Amboyna, Japan, &c.; flower small, interior yellow, vexillum purple, erect shrub, pubescent, nearest in alliance to *Lupinus*. The seeds are good to eat, and when young, very delicate. On soaking the round seeds for an hour in moderately hot water, they take exactly the form and appearance of the common white bean, become quite tender, and have a pure and delicious nutty and oily flavor. *The whole plant, with the seed, is excellent for fattening hogs and cattle.*

A discussion took place lately at the American Institute, New York, in reference to this plant, and letters were read from members of the Institute who had cultivated it. A Mr. Ernst of Cincinnati, appears to have grown it

largely and considers it a valuable addition to the leguminous crops of America. The seed is as good as the common white bean for food, and better adapted for rich soils and warm climate, and the straw is excellent fodder for stock; and it promises to yield bountifully of both. In planting the peas, care must be taken to give them plenty of room to spread, as the stalks grow from three to four feet high, with an erect bushy stem, having numerous branches which are thickly set with short, woolly pods. It seems to delight in a rich, loamy, moderately dry soil, and a rather warm climate; but it does not need a very long season. It seems to be a most prolific bearer, and no doubt will prove a valuable crop.

From the accounts we have read, we should think it would succeed well on suitable soils in Canada.

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#### Literary and Miscellaneous.

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WILLIAM McDUGALL, Esq., EDITOR.

We have much pleasure in presenting to our readers the 1st of a series of articles on "Familiar Chemistry," from the pen of a lady who has earned for herself a high reputation as a writer. She stands in the front rank of female writers in Canada. Mrs. Thomas is a woman who reads and *thinks*, and who is neither ashamed nor afraid to express her thoughts, even on subjects which are supposed to interest but one half of mankind. Her writings so far as we know have hitherto related chiefly to political and moral questions, but it must have been obvious to the reader, that her studies embraced a much wider field, and that the material world and the physical sciences had not escaped her attention. It is a singular fact that some of the best elementary treatises on Chemistry and Natural Philosophy, have been written by females. The "Conversations" of Mrs. Marcet, though written some years ago, are still used as text books, and the compilations of Mrs. Willard and other American female writers, hold a high place among school books. There seems to be a delicacy of apprehension in the female mind, that detects every obscurity, and an ingenuity of ex-

pression that is peculiar to the sex. No one can make the child understand so well as the mother.

The contributions of Mrs. Thomas to the *Agri-culturist* will be adapted to the wants and capacity of our youthful readers, and we hope the the "Farmer's daughter"—an interesting, but too often in the matter of education, a much neglected member of the family—will read and profit by the "familiar" lessons of Mrs. Thomas in this department of our journal.

### FAMILIAR CHEMISTRY.

BY MRS. M. F. H. THOMAS.

#### CHAPTER I.

The season of renewed life and beauty—of love and gladness, is at hand. The drifted snow will soon have passed from nature's broad bosom, and teeming life will take its place. LIFE—that great principle which is ever, the breath of God, the Creative Energy—which, from the shapeless dust we tread, from the impalpable gasses we breathe, and the formless waters, fashions such infinite variety, beauty and vigour—that perfect adaptation which stamps the universe with unity.

"All parts of one stupendous whole."

And while we behold nature's resurrection, and admire the glorious metamorphosis of our earth, it enhances that pleasure immeasurably to—

"See the pulse of the machine."

To watch the wonderful processes by which all those forms of living beauty are elaborated.

First, however, to understand them well we require to know something of the elements and substances around us. Chemists have resolved all discovered substances into fifty-five elements, or simple principles; of these, but four enter, in any important degree, into the composition of organic substances; and are therefore all which are legitimately included in the province of organic chemistry. They are oxygen, nitrogen, hydrogen and carbon. The atmosphere is composed of the two first, in the proportions of one volume of oxygen to two of nitrogen. In the atmosphere these gases are not chemically united, but mechanically mixed. They unite chemically in five different proportions; the result being, in every case, a subtle poison; of which nitric acid, commonly called aqua-fortis, is an example. In this fearful poison the proportions do not differ materially from those in the atmosphere, the difference being the *mode* of admixture.

The atmosphere contains, also, a small quantity of aqueous vapor (water in a state of vapor), of ammonia, a gas evolved from decaying organic substances, and of carbonic acid,—a mixture of carbon and oxygen,—the result of combustion of every description, from the coals in the grate to the flaming prairies of the west, and "cities laid in ashes." It is also evolved by breathing. Air, in the lungs, is subjected to a process analogous to combustion, by which it is loaded with carbonic acid, and aqueous vapor. Carbonic acid is destructive to life, and being heavier than common air, has a tendency to settle down; and the consequence is, the "fixed air" in wells, and other excavations by which so many lives have been lost. A candle or burning brand introduced into the suspected locality is, however, a sure test of its presence in sufficient quantities to endanger life. If danger exists, it will at first burn dimly, and at length go out, as air which will destroy life will not support combustion. How often in crowded assemblies have we seen the lights, as the night waned, burn dimly? Did you ever think why? It is a warning that the vitiated air can no longer be breathed with impunity. Oxygen is the supporter of life and combustion. Combustion being, in fact, but the rapid union of oxygen and some other substance, usually carbon, as that forms the chief part of wood and coal; and the product of course must be carbonic acid. The larger the quantity of oxygen contained in the air we breathe the more life and vigor it imparts; though the inspiration of pure oxygen is harmful, as it excites the organism to unnatural action.

On the contrary, when the air is loaded with carbonic acid, we feel languid, dull, and sleepy. How often, especially during the winter season, is this the case with almost every person, confined in close rooms, ill ventilated, and perhaps overheated. All persons should spend as much time as possible in the open air, as there only, are they free from unhealthy vapors. It would seem that the air thrown out from the lungs, would be re-inhaled, at least in part, at the next inspiration. This would be the case, but for a most beneficial law of nature, (to be explained hereafter,) viz.: that heat lessens the gravity or weight of bodies, causing them to rise through a heavier medium. The air becomes warmed in the lungs; and hence lighter than the surrounding atmosphere, through which it rises, leaving a pure strata for us to breathe.

Winds are of use, also, in purifying the air,



and preventing stagnations of mephitic vapors. They also preserve the equilibrium of temperature, being developed by the inequality of heat. The air, becoming from local causes, overheated, or overcooled, forces the warmer and rarer to rise till it reaches a stratum of its own density, while the cooler rushes in to supply its place. A double purpose is therefore served. The equilibrium is preserved, and the air is purified. Winds and storms, are in fact, remedies for diseases in the outer world, which if not checked would prove terribly fatal. So we ought to take them as they come, and be thankful, even if they should destroy our crops or cause us other inconvenience. As the different ingredients of the air are of different gravities, it might be supposed that they would separate into different stratas. Such would be the case but for the property which gases possess, of *intermixing* when mingled, even without chemical affinity. For instance, carbonic acid is much heavier than common air; and nitrogen is much lighter, yet place a bell glass containing nitrogen over a vessel of carbonic acid, and the gases will intermix to a great degree; or in other words, the carbonic acid will rise in part, and the nitrogen sink.

The question may suggest itself—What becomes of all the carbonic acid generated by so many natural processes? Will not the air in time become fatally vitiated? Nature is self-regulating. The vegetable creation is the grand purifier. In that immense stores of carbon are *locked up*; as it constitutes the solid parts of plants. Under the influence of light, plants decompose carbonic acid, appropriating the carbon, and throwing off oxygen—the life of animals. Without light, however, they exhale carbonic acid, thereby becoming soft, white, and juicy. It is carbon which gives solidity. Light is also supposed to possess considerable influence over the animal organism, in preventing deformities, or favoring perfect development. Tadpoles secluded from light never become frogs, but remain always the same, or become unsightly monsters. People who live in dark lanes of cities, and in cellars, are often deformed, unhealthy and depraved; and fashionable *ladies and gentlemen*, who shun the life-giving kiss of the great source of life, are *tallow* white, lymphatic, like darkness-bleached plants, and emphatically *greenish*. Light also dispels bad vapors, and is a potent agency in the cure of disease; as the experience of the most celebrated physicians testifies. Epidemics are always more prevalent and fatal on the

shaded sides of narrow streets. How absurd then to keep the rooms we occupy, so secluded from light, as to live in perpetual twilight! What if the cheek should get a little browned? The well formed body and the glow of health, will impart a charm which will throw bleached faces, and deformed shapes, *into the shade where they belong*.

Brooklin, March 8th, 1854.

#### GEOLOGY—NO COAL IN CANADA.

The following report of a Lecture on Geology by Professor Hind, is necessarily imperfect without illustrations. It is copied from one of the city journals, and will be read with interest from its reference to the important subject of coal. The Provincial Geologist, Mr. Logan, as well as other men of scientific eminence, have pronounced the opinion that Canada is, geologically, below the coal measures—that when our timber is destroyed, our fuel will be exhausted! This is a fact of great import to the Canadian farmer, in view of the long winters he must prepare for.

On Friday evening, March 3, Professor Hind delivered a masterly lecture in the Mechanics' Institute, in this city, on "Geology." We give below an outline of the topics handled although the technical nature of the subject renders it somewhat difficult to frame a literally correct report. The Professor commenced by saying that the very remarkable interest which had been taken during the last few years in the study of Geology had induced him to endeavour to present a popular view of the Geological structure of Canada West, in relation to that particular portion of North America, of which it forms a part. It was scarcely possible to form an idea of the geological structure of a country like Canada, without taking a comprehensive view of the whole structure of the Continent on which it was situated, and he proposed, therefore, that evening to give a lecture on Geology generally, in special relation to the Continent of North America, reserving a more minute explanation of the Geology of Canada for another lecture. Referring to an ordinary map of the North American Continent, and a coloured Geological map of the United States and Canada, the lecturer pointed out three great chains of mountains, firstly, the Laurentine Mountains, forming the boundary between Canada and the Hudson Bay Territory, and having an altitude varying from 1200 to 2500 feet; secondly, the Alleghanies, running along the east, and lastly the Rocky Mountains to the west. These three systems of mountains formed a gigantic triangle, which, it would appear, in ancient and very remote times formed the boundaries of a vast sea. There was another very important and

most curious fact which should be recognized, that all of these mountains were of different ages. There is scarcely a single range of mountains on the Continent of America which may be considered contemporaneous with another range. The Laurentine Mountains are the oldest, and the Alleghanies appeared at a far later period in the history of the earth; the geological age of the Rocky Mountains varies very much according to the particular point selected for examination. The lecturer then proceeded to explain the nature of the various classes of rocks which appear in Canada, superimposed the one above the other, and each appearing in succession at the surface in different sections of the country. A geological section of the country from Quebec to St. Louis illustrated this succession. Beginning at Quebec, we find a remarkable series of rocks occupying the valley of the St. Lawrence, and the whole of the country north of Lake Ontario, &c., and known as the Silurian group, which was the most ancient system of rocks deposited at the bottom of the great sea, bounded by the three chains of mountains before referred to. But beginning with the Primary Rocks—of which specimens might be seen in the huge boulders scattered over our fields, and which were composed, generally speaking, of granite—there could be no question that a vast trough of granite rocks extended from Quebec down to Texas—that this hollow trough once formed the bed of a sea—and that time after time, amid a thousand revolutions, vast masses of rock were deposited, one over the other, in this huge trough, until the period of the coal arrived. Commencing at Quebec, as he had already stated the first series of rocks deposited was seen to be the Lower Silurian. The manner in which it was deposited was illustrated at Lake Huron, where we frequently found a series of small islands, having a nucleus or centre of granitic rock, around which is deposited the Silurian rock containing the remains of a large number of shells, and still bearing the impress of waves firmly engraved in the solid rock, and found at a depth of very many feet beneath the surface. In the immediate neighbourhood of this city, Mr. Hind said he had found similar specimens, bearing ripple marks 7 or 8 inches in breadth, one of which he exhibited to the audience. The specimen consisted of what originally had been a series of layers of very fine mud, which were first impressed by the gentle ripple of a wave, and then hardened in the sun, and in course of time consolidated. Some of the specimens in his possession, taken from this neighbourhood, were found at a depth of 40 feet. The lowest member of the Lower Silurian group commencing at Quebec, is the Potsdam sandstone, in which are found the remains of animal life in the form of minute shells. The celebrated Provincial Geologist, Mr. Logan, had also discovered in it the tracks of different animals, which had excited the greatest possible discussion among learned men in Europe. This rock extends from Quebec all the way across the country to New Mexico and Texas, and perhaps, further investigation might show, still further. Its thickness in some parts is about 400 feet. Sometimes it is beautifully even, as if

deposited at the bottom of a calm and tranquil sea, and at other times it is found very much distorted. From the remains discovered in this Potsdam Sandstone, it would appear that at that period of the world's history, there was but a very small amount of animal life in existence. The next member of the Lower Silurian group to be noticed was the Kingston Limestone, geologically known as the Trenton Limestone. A number of the fossils found in this stone, Mr. Hind said, he would exhibit at his next lecture. He had that very day, he said, received a letter from a barrister at Bytown, who appeared to have made some remarkable discoveries as to the fossils found in this limestone, which would excite great attention not only among geologists, but among the public generally. Trenton Limestone is a rock of astonishing interest, containing an infinite variety of organised forms. On Lake Simcoe, there were thousands and tens of thousands of thousands of cubic feet composed of corals, evidently once the abode of an animal very similar to the sea-worm, which built those remarkable structures, known as the coral rocks. Some beautiful corals were here exhibited, by the lecturer, who next proceeded to speak of the third member of the group, known as the Utica slate, which was found developed in Whitby to a large extent, being disposed on the Trenton limestone with great uniformity. The Utica slate possesses some very peculiar characteristics. It contains the remains of a very singular variety of animals, and is also found to be very rich in sulphur and other materials. Hence the fact that sulphurous and saline springs are so common in the Townships where the Utica slate is found. Its thickness is in general about 200 feet. The next and last member of the Lower Silurian group is that on which Toronto stands. If the clay were to be removed, we would see below us an extremely beautiful and highly polished rock, extremely rich in organic remains, and containing the marks of waves and even the impress of rain-drops. (Specimen exhibited.) Specimens, bearing the impress of rain-drops are very common in this neighborhood. The name given to this fourth member of the series is the Hudson River group or Lorraine shales. Animal remains might be found in these rocks in countless multitudes. In this immediate neighborhood, in the River Humber, on the Don, and wherever we remove the clay, we would come to corals two or three feet in thickness, and sea shells. Such were the four rocks which belonged to one great epoch in the earth's history, known as the Lower Silurian epoch. After these four members of one-group had been deposited, a very peculiar change must have come over the condition of the earth, because we find from the remains in the other rocks which lie superimposed upon these, a change of a most extraordinary character in the animals which flourished during the next period. We find that the animals assumed apparently a higher degree of organization; we find corals for example developed to a much greater degree, and shells existing to a much larger extent, and also animals which approach nearer and nearer to the general type of the fish. In illus-



tration of this part of his lecture, Mr. Hind produced a beautiful coral obtained in the Upper Silurian formation in the neighborhood of Woodstock, where he said fossils of singular beauty existed in such innumerable multitudes that the geologist was at a loss which to take first. Last summer he brought home with him from that district two or three hundred weight of different varieties of corals. To the Upper Silurian group succeeds the Devonian, the only one remaining to be spoken of as developed in Canada. During this period an immense number of rocks were deposited, but in Canada there were few representatives of them. This was a matter of very great importance, as the whole question of the presence of coal is dependent on the presence of certain rocks, belonging to the Devonian period. Unhappily, we find that, as developed in Canada, the Devonian rocks not only pass completely over the western portion of the country but extend into the United States several hundred miles. Above the Devonian group comes the Lower Carboniferous, that particular species of rock which was deposited before the formation of coal to any considerable extent, the anthracite coal, however, having been deposited long before the Lower Carboniferous group. The coal fields of North America repose in the centre of the great geological trough formerly described. There was no question, however, that at one time coal extended to Canada, and that it was found not only in the valley of the St. Lawrence, but developed to an enormous extent towards the north. Neither could there be any question that coal once existed to a great extent in the Hudson's Bay Territory, but all this vast deposit of coal, not only so far as this country was concerned, but also to a great extent so far as the United States was concerned, had been swept away by a vast system of denudation by the action of water. As had been proved in two distinct ways by Mr. Logan, the geological structure of the country was such that no hopes could now be entertained of the discovery of coal in Canada. Returning to the three systems of rocks, with the notice of which he commenced his lecture, Mr. Hind said there was not the least reason to suppose that the Laurentine mountains were formed after the great sea of which he had spoken existed, but every reason to suppose that they were formed before. This was known by the circumstance that all the rocks which he had described reposed in perfect uniformity on the primitive granite of the Laurentine Mountains. Not so, however, with the Appalachian chain, or the Alleghanies. These were found to penetrate in a curious mode all the various groups of rocks to which he had called attention. Certain portions of the chain come through, uplift, pass over, and frequently overflow the Lower Silurian, Upper Silurian, Devonian, and Lower Carboniferous, so that several portions of the Kentucky coal-field were raised several thousand feet in the air. Finding that the coal beds no longer preserved their horizontality but were pushed up, some on one side, some on another, geologists inferred that that chain of mountains must have been called into existence after the formation of the coal. It had been ascertained that there were

six different mountain ages belonging to this continent. The oldest was the Laurentine. The next in order was that which gave its name to the County of Two Mountains in the valley of the Ottawa—a peculiar mountain which must have been uplifted immediately after the deposition of the Potsdam Sandstone, through which it had broken, but the Trenton Limestone lay conformably upon it, showing the precise period of its formation. The Montreal Mountain again was upheaved after the Trenton Limestone, but before the deposition of the Utica Slate. Then came the Green Mountains, which are ascertained to have been raised after the deposition of the Lorraine Shales. And so with the rest, the most recent being the upheaval of the Alleghanies. Independently of these vast movements, there had from time to time occurred movements of a lesser character, but of great importance to us, originating the mineral beds which were found to intersect the whole region north of Lake Superior and Lake Huron, and in fact the whole of the Laurentine Mountains. In travelling along the shores of Lake Huron or Superior we could scarcely go ten yards without coming across what is called a fault. We should discover veins of granite rock which had apparently been injected into the original granite rock. These are called dykes, and the phenomenon which has given rise to the dykes is called a dislocation. Suppose that some portion of a mountain by some force from below becomes slightly upheaved, it is clear that in sinking down again to its original position the parts may not exactly fit into each other, and the consequence will be that there will be cavities produced between the lines where the rock has slipped. These cavities become filled with infiltrated matter, either with a substance in the form of a mineral or pure metal, on Lake Huron and Superior with copper for example, sometimes found perfectly pure. (Specimens of copper produced.) These dykes which are discovered to such an immense extent on the shores of Lake Superior and Lake Huron have occurred at different periods, but there was little question that almost all of them were anterior in their origin to the formation of coal. Mr. Hind then referred to three remarkable rocks, which still bore evidence that they constituted islands in the primitive Silurian Sea, and concluded by showing from certain appearances in the centre of the great American Geological trough, that an upheaval had taken place extending towards Canada, which rendered it impossible that the Michigan coal-field extended into Canada West.

## SPRING.

### *For the Agriculturist.*

"'Tis a month before the month of May,  
And the Spring comes slowly up this way."—Coleridge.

To the Canadian the month of April is not the most interesting; the weather is frequently unsettled, and the ground is not sufficiently dry to commence farming operations. The snow which had covered the fields gradually disappears,—the frost which had held every-

thing with an iron grasp begins to relax its hold, and the face of Nature presents the appearance of a released captive who had long worn the chains of slavery; but who now, finding himself at liberty, leaps and sings for joy.

Stern Old Winter, who for months had reigned with despotic sway, has now died a natural death, and over the once powerful, but now harmless tyrant, the stormy wind from the North howls his requiem, and the mild breezes of Spring are sottly kissing the flowers already springing from the jovous earth. Spring comes like a blushing maiden, with sweet smiles and airy step; her spirits are buoyant, and she diffuses animation and vigor everywhere around. The invalid, whose cheeks the western breeze had not fanned for months, now ventures out and in the face of Nature he sees an emblem of himself. The cenizens of the forest, that had lain dormant during the winter, now come forth, and, as if conscious of their mi-improvement of time, seem desirous to make amends or atone for their long stupor by increased activity and renewed diligence.

But if April has little in itself to interest the Canadian, the case is vastly different with those who have been brought up in the British Isles; they have been accustomed to see vegetation in this month in a forward state, in the salubrious climate of Great Britain, weeks ere this. The fields are covered with their native green, the trees put forth their buds, the "banks and braes" are plentifully bedecked with primroses of various hues, the daffodil and snow-drop are already in bloom, the husbandman commits the seed to the bosom of the earth; and waits in patience the return of a bountiful harvest.

Every hedgerow, brake, tree, and wood, is rendered vocal by the voice of tuneful birds roused by the skylark, that "shrill-voiced messenger of morn," which from its "low and grassy bed" starts melodious, ere the shadows have fled, and soars to the clouds to meet the approaching sun. These are but a few of the many pleasing recollections which, at this particular season of the year, force themselves upon the contemplative mind; and although our beloved Canada—our adopted home—possesses advantages infinitely superior to the land of our fathers, still we have frequently to "check the rising sigh," when the dear scenes of our youth come up in rapid succession before us, and, though the all-destroying hand of Time has left its impress upon everything around us, we retain as lively a recollection of them as though we had seen them but yesterday.

The Canadian farmer, who, for the last four months, had little else to do than attend to his cattle, cut and haul his firewood, take out timber for building purposes, and carry his produce to market, is once more called upon to resume his toil; his sons, who, during the winter months, had been cultivating their minds at the neighboring school, are now kept at home, and are busily employed repairing the dilapidated fences, making sugar, collecting and preparing their farming implements, so that when the ground is sufficiently dry, they can at once commence operations. The prospects of the farmer were never brighter than now; everything that he has got to sell commands a high price; he need not be afraid to sow all the land he can spare in wheat, it will be all wanted. Let him, then, go forth to his labour with renewed energy and vigor, thankful, at the same time, that while many of the "nations of the earth" are convulsed with war, he can, in this happy land, "sit under his own vine and fig tree,—none daring to make him afraid."

R. S.

## Reviews, &c.

*The Anglo American Magazine*.—March, 1854. Toronto: Maclear & Co.

Among the principal contents of the present number may be mentioned, the continuation of the "History of the American War of 1812; the "Review of Abbott's Napoleon Buonaparte;" "Chronicles of Dreepdaily;" "The Origin of Sea-Sickness;" "Confessions of a Junior Barrister;" "The Blankshire Hounds;" "The Editor's Shanty" contains as usual much amusing, and frequently really useful, information, accompanied by flashes of wit and genuine good humour. The illustrations consist of a plate of the Fashions, a well executed view of Fredericton, New Brunswick, and a lithograph of the forever celebrated world's disturber, Napoleon Buonaparte.

Our readers should remember that the "Anglo-American" is essentially what its title denotes, a *British-American production*, and is richly deserving a liberal and wide-spread support.

*Transactions of the Wisconsin State Agricultural Society*.—Vol. 2: 1852. Madison: Beriah Brown, State Printer. 1853.

We are indebted to the worthy and efficient Secretary of the Wisconsin State Agricultural Society, Albert C. Ingham, Esq., for another volume of their Transactions. In addition to the usual Report of the State Society, and the Reports of the County Societies, the volume contains several interesting Essays on various Agricultural topics. "The Relation of Crops to Soils," by Dr. Lathrop; "On the Adaptation of Crops to Soil and Climate," by John Y. Smith; "On the Different Breeds of Neat Cattle," by T. P. Turner, and several others, will well repay a careful perusal. A copious list of the Fauna and Flora of Wisconsin is appended, with tables of Meteorological observations for the year 1852. We shall return again to this interesting Report hereafter, in the meantime we beg Mr. Ingham to accept our best thanks for his courteous consideration.

## EDITOR'S NOTICES.

### AGRICULTURAL REPORTS.

Reports have been received at the Office of the Board of Agriculture, to the present date, from the following Counties:—Waterloo, Stormont, Oxford, Addington, Hastings, and Ontario.

All subscriptions to Township and County Agricultural Societies for the present year, are required by law to be paid into the hands of the Treasurer of the County Society, on or before the 1st day of May next.

March 22nd, 1854.

### AGRICULTURAL SEED.

We beg to call the attention of our readers to Mr. Fleming's advertisement in the present number. Mr. Fleming has on hand an extensive stock, selected with care and judgment from some of the most respectable Seedsmen in Great Britain; and as he makes a practice of testing the vitality and purity of his seeds before offering them for sale, the public may safely calculate on being well served.



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## FRESH GARDEN, FIELD AND FLOWER SEEDS.

THE Subscriber begs to inform his Friends and the Public, that his Stock of Fresh Seeds for Spring sowing is now complete.

The Stock of Agricultural seeds is well selected, comprising a fine Lot of Imported.

|                                   |                                  |
|-----------------------------------|----------------------------------|
| Purple Top Swede Turnip.          | White Sugar Beet.                |
| Yellow Aberdeen do.               | Yellow Globe Mangel Wurtzel.     |
| White Globe, and other varieties. | Long Red do. do.                 |
| White Belgian Carrot.             | Spring Tares, or Vetches.        |
| Long Orange Altringham, &c.,      | Red and White Clover.            |
| Field Parsnips.                   | Timothy, and other Grasses.      |
| Spring Rape and Cow Grass.        | 100 Bus. Good Seed Barley.       |
| White Marrow-fat Peas.            | 600 Bus. common Oats.            |
| Blue Imperial                     | 100 " Early Ash Top Potatoes.    |
| Early and Late Field do.          | 200 " Early June, (a fine sort.) |

The Subscriber has also a full and general assortment of all kinds of GARDEN SEEDS. suitable for the country—a catalogue of which, with directions for sowing seeds, can be had GRATIS on application.

Twenty Packets of choice Flower Seeds will be sent free by Post to any part of the Province, to the address of any party remitting \$1, free of postage.

JAMES FLEMING,

Seedsman to the Agricultural Association  
of Upper Canada

Toronto, March, 1854.

## STUD HORSE FOR SALE.

A BEAUTIFUL BAY HORSE, with black legs, mane and tail; stands sixteen hands and a half high, rising four years old—without fault or blemish. He was got by Mr. Blanchard's imported KING GEORGE, and is as pure a bred coach horse as can be found in the province,

Further particulars can be known by applying to the proprietor, WILLIAM DRINKWATER, Lot 16, 3rd line west of the Centre Road, Chinguacousy, Co. of Peel.

Feby. 23th, 1854.

## SEWERAGE AND DRAIN-PIPE MACHINE.

MR. CHARNOCK begs to state that he will very shortly be prepared to exhibit one of his Machines in operation for Moulding Sewerage and Drainage Pipes of all description, as well as perforated Bricks, &c., and to receive orders for the same.

This Machine has been thoroughly tested in England, and is allowed by all competent judges to be the best extant for the purpose.

Early applications are desirable.

Sets of Drainage Tools, of the most approved kind, supplied.

Hamilton, 15th February, 1854.

## HYDRAULIC AND AGRICULTURAL ENGINEERING.

MR. JOHN HENRY CHARNOCK, Hydraulic and Agricultural Engineer, (a Member of the Royal Agricultural Society of England, and author of its Prize Report on the Farming of the West Riding of Yorkshire, as well as other papers on Drainage, &c., published in its Journal; and late an Assistant Commissioner under the English Drainage Acts,) begs to offer his Professional Services to the City and Town Authorities, and to the Agriculturists of Canada, and to solicit the honor of their patronage and support.

Having for several years past devoted special attention to that branch of Engineering which embraces more particularly works of Town Sewerage and Water supply, the Drainage, Irrigation and general Improvement of Land, the planning and erection of Sewerage and Drain-pipe works, Farm Buildings and Machinery, together with the laying out of Farms and Ornamental Grounds, Mr. Charnock ventures to think that such experience, coupled with a practical knowledge of the approved systems and appliances of the day, will enable him to render valuable and efficient services to those who may favour him with their commands.

Mr. C. is furnished with testimonials from numerous parties of known standing and repute, which he will be happy to submit to those who may contemplate employing him. And all communications addressed to him, CITY OF HAMILTON, CANADA WEST, will have prompt attention.

JOHN H. CHARNOCK.

OFFICE, JAMES'S STREET, HAMILTON—At Mr. Simons', Land Agent, close to the St. George's Hotel. Hamilton, 15th February, 1854.

## NOTICE.

### DURHAM BULL CALVES.

THE Subscriber does not intend to rear any Bull Calves for sale this Season, unless to Order.

Five thoroughbred Cows, Duchess or Bates blood, are now expected to Calve.

Intending Purchasers will, of course, be at liberty to select.

ADAM FERGUSON.

Woodhill, Waterdown,  
February, 1854.

## THE CANADIAN AGRICULTURIST,

EDITED by G. BUCKLAND, Secretary of the Board of Agriculture, assisted by Mr. H. Thomson and the Proprietor. It is published on the 1st of each month by the Proprietor, William McDougall at his Office, corner of Yonge and Adelaide Streets, Toronto, to whom all business letters should be directed.

# THE CANADIAN AGRICULTURIST,

AND JOURNAL OF TRANSACTIONS

OF THE

BOARD OF AGRICULTURE, AGRICULTURAL ASSOCIATION, &c.

VOL. VI.

TORONTO, MAY, 1854.

No. 5.

## Reports, Discussions, &c.

### COUNTY OF PRESCOTT AGRICULTURAL SOCIETY.

The Annual Meeting of the County of Prescott Agricultural Society, was held pursuant to public notice, at the Court House in L'Orignal, on Monday, the 6th day of February, 1854.

Charles P. Treadwell, Esquire, President, occupied the Chair. He declined re-election, and made some remarks on the occasion which will be found below.

Charles Hessey, Esquire, was unanimously appointed President for the ensuing year.

Chauncey Johnson, Jun., Esq., Treasurer, S. M. Cushman, Esq., Secretary.

James Cross, Philip Downing, Alfred Cass, Simon Cass, George Willis, James Street and Richard Allen, Esquires, were appointed Directors.

The following resolutions were put to the meeting, and carried unanimously:—

Moved by CHAUNCEY JOHNSON, Jun., and seconded by Mr. PETER STIRLING,

1. That the thanks of this Society be presented to Charles P. Treadwell, Esq., for his valuable services as President of this Society, for the district of Ottawa, and the Counties of Prescott and Russell for many years, and while we regret his retirement from the office of President of our County Society, we rejoice that his services have been appreciated by the Province at large, in his appointment to the Presidency of the Provincial Association.

Moved by Mr. WILLIAM BRADLEY, and seconded by Mr. EWEN McMASTER,

2. That Col. Thomson, R. L. Dennison, Sheriff Ruttan, and John Harland, Esq., having been ballotted out, and having retired from the Board at the end of last year, and as we acknowledge their services for the past, the Agricultural Society of the County of Prescott would most respectfully recommend these gentlemen to the Bureau of Agriculture, for a re-election as members of the Board.

Moved by Mr. JOHN PATTTER, and seconded by Mr. FARQUHAR ROBINSON,

3. That the thanks of the Agricultural Society of the County of Prescott be tendered to the Bureau of Agriculture for its exertions in favor of the Board and Association of Upper Canada, and also for the assistance rendered to the Agricultural Societies throughout the Province, and we would beg to suggest that a Bureau of Commerce and Manufactures be established with as little delay as possible.

Moved by Mr. SIMON CASS, and seconded by Mr. JAMES CROSS,

4. That the Agricultural Society of the County of Prescott acknowledge with great pleasure the unwearied exertions of the founders and members of the Agricultural Board of Upper Canada and they feel confident that they express the feelings of all the farmers of the County, in acknowledging the success of their labours and thanking them for their exertions in behalf of Agriculture.

Moved by Mr. H. WARD STORM, and seconded by Mr. ALFRED CASS,

5. That the thanks of the Agricultural Society of the County of Prescott be tendered to the Agricultural Association of Upper Canada, for their exertions in bringing before the public the productions of Canada at our Annual Exhibitions, and this Society is of opinion that the Association is entitled to the thanks of every farmer in the Province for its services.

Moved by Mr. CHAUNCEY JOHNSTON, and seconded by Mr. JOHN PATTTER,

6. That the late President C. P. Treadwell, Esq. he requested to furnish a copy of his address for publication, together with the proceedings of this meeting.

After the regular routine business of this Society was disposed of, the meeting adjourned until the first day of May, at the Court House in L'Orignal.

CHARLES HURSEY, *President*,  
S. M. CUSHMAN, *Secretary*.

### REMARKS

Made by CHARLES P. TREADWELL, ESQ., at L'Orignal 6th of February, 1854, on the occasion of his retirement from the office of President of the Agricultural Society of the County of Prescott.

GENTLEMEN,—On declining a re-election to the office of President of your Society, which I have had the honor of holding for the last sixteen years, and whilst returning you my thanks for



that expression of your confidence, permit me to make a few remarks.

The first Agricultural Society for the Ottawa District, comprising the Counties of Prescott and Russell, (the latter at that time including the Townships of Gloucester and Osgood within its limits), was organized under the Presidency of the late Hon. George Hamilton of Hawkesbury Mills, and I held the office of Treasurer. The institution being then a novelty, the utility of which had not been tested, it was found difficult to raise the necessary amount of funds; this deficiency was made up by Mr. Hamilton, Dr. David Patter, Donald McDonald, Esq., then M.P.P., and myself. When, however, the Society became better developed, we were not allowed to contribute beyond the amount of our subscriptions, and our liberality was handsomely repaid by our increased subscriptions. Many who were with us then, have descended to their graves, but their estates with their good names and industrious habits have been left to their offspring. In taking a retrospect of the past, I would beg leave to direct your attention in the first place, to one department in which we do not appear to have made any advancement. In the early days of our society, the farm yards of Dr. David Patter, Donald McDonald, Elisha Cass, Joseph P. Cass and Elijah Kellogg, Esquires, could produce cattle fully equal to any in these Counties at present.

In the neighbouring County of Carleton, however, several farmers have earnestly entered into the business of breeding the best English and Scotch cattle, as well as improving the breed of horses.

Among them I would make special mention of Wm. Byers, Esq., of Goodwood Hall, near Richmond, and of Wm. Thompson, Esq., of Nepean. Our horses have improved, but in this respect we are still behind our neighbours in the United States, especially in carriage horses.

The establishment of Ploughing Matches has done much to improve our young men in the use of that most necessary implement of husbandry, the Plough.

This branch of Agriculture is much indebted to the exertions and example of Peter Stirling, Esq., who was the first to introduce the Scotch Plough.

In the production of grain and hay our farmers will bear a favorable comparison with those of any of the adjoining counties, and being provided with an excellent material for constructing fences (white cedar), some of our enclosures will vie with the best in the Province.

In reference to farm yards, stables, and out-buildings generally, the Eastern section of Upper Canada, far excels the Western; the means by which the most complete specimens of these have been constructed, were derived from successful operations in the timber trade, for instance, those of Mr. Byers, which are decidedly among the best in the Province, combining economy with utility in a high degree. That gentleman, having now turned all his attention to Agriculture, will, I am confident, render great service to the farming interest.

f While the lumber trade has in many instances furnished the means for improving our buildings, it has also secured to us a market for farm produce, and at the same time raised the price of labor to such a degree, that the work must be almost entirely performed by the farmer and his sons.

The great superiority which the Western part of Upper Canada possesses over the Eastern, consists in my opinion in this; that the farmers in the former section follow that branch of industry exclusively, and devote all their energy, bodily and mental, to secure its success. They take great pains to secure the best and cleanest seeds of all kinds, and prepare their soils as well as possible for the reception of the seed in the proper season.

They have more labor saving machines, both for the preparation of the ground and for securing the crops. They also carefully attend to the introduction of superior cattle, sheep, swine and poultry.

Among the more favourable symptoms connected with farming, I may notice the establishment among us of an excellent library, containing a large assortment of books treating of Agriculture, which I feel proud to recommend to every practical farmer. There is also, I am happy to find, an interest beginning to be evinced in favour of horticultural pursuits.

In a circular of mine, dated 2nd of January last, as President of the Agricultural Association of this Province, addressed to each of the County Agricultural Societies, I have made several suggestions to which I now beg leave to draw your attention, and solicit your co-operation, in so far as you may be pleased to approve of them.

I thank you for the confidence which you have so long reposed in me, and hoping that a kind Providence may give you favorable seasons, I wish you every success in your future efforts for the welfare of the Society, from the Presidency of which I now retire.

#### TOWNSHIP OF HAMILTON FARMERS' CLUB.

ON ARTIFICIAL MANURES.

(ABRIDGED REPORT.)

The Township of Hamilton Farmers' Club, held a meeting at Cobourg, on February 24th, 1854, Wm. Richardson, Esq., of Cold Springs, was called to the chair. MR. P. R. WRIGHT said,

GENTLEMEN,—In the present position of farming here, there are comparatively few of sufficient spirit to make the attempt at an experiment with some of the expensive Artificial Manures; and I know full well that there are many *wondrous* wise and purse proud men, who will laugh at the attempt to argue the benefit we would derive from their use. I am of opinion, however, that we are on the eve of a complete revolution in Canadian farming, that the indolent and profitless system of bare fallows will give place to the enlightened and profitable *regular rotation and green crops*, and that this again will demand attention

to the *cheapest and best* modes of producing roots, and that result will only be brought about by a liberal use of some of the manures which the experience of others so highly recommends to our notice. The term Artificial Manure is generally understood to apply to all foreign substances not directly connected with the farm yard, that is—neither the product of vegetable growth, nor directly the residuum of the consumption of vegetable substances by animals. Thus Guano is primarily derived from the ocean, in the fish consumed by sea fowl, whose excrements having accumulated on islands and rocks furnish an almost inexhaustible supply of a manure so powerful and concentrated as to baffle all attempts at imitation; then the earth presents another class of manures, not the result of vegetable growth but the product of Geological events, as the limestone rocks, chalk, and marl beds, gypsum deposits, and sulphur, from which is derived sulphuric acid (oil of vitriol) now largely used to facilitate and economise the effect of bones. Again, there is another class to which the term 'Artificial' applies almost exclusively, they consist individually of different substances mixed in various proportions according to the special purposes to which they are intended to apply. Thus we have a variety specially compounded to promote the growth of turnips and other root crops in which phosphoric acid is largely employed; another variety, principally composed of nitrogen, is manufactured and sold to promote the growth and yield of cereals, and a third kind composed of salt, and gypsum. I have often used it, and can state from experience that it is peculiarly adapted for peas and other leguminous crops. To such manures the term Special is also applied. They are, or ought to be, compounded on the basis, which a chemical analysis of the ashes of plants furnish for providing their natural and peculiar food; success in the use of such manures will depend in great measure upon the attention which is paid by the farmer to the principles regulating the manufacture of the manure employed. the most *profitable* system is that which we ought to adopt, and in the case of Artificial Manures science has pointed out their true scope and object, and experience has already ascertained the advantage of employing them—first, in the cheapness of their application, and secondly, in the results. As a proof of the popularity of Guano in England, its sale in 1846 was 24,000 tons, and in 1853, 64,000! The English farmer is forced to calculate much closer than his more favored brother here, and we *must believe* that this great increase in the use of guano would never have taken place if its profitable application had not been *an established fact*! Its value is further demonstrated in the panic which has arisen in Britain from the prospect that the supply will in a few years be exhausted. The Royal Agricultural Society offered two years ago a premium of \$5000 to the inventor of a manure equal to guano; which could be sold at \$25 per ton, which is about one-half the price of guano. No one appeared to claim the prize till very lately. The *Times* of the 26th of January says:—"A new patent substitute for guano consisting of decom-

posed and concentrated sea weed, is about to be introduced by Mr. Longmaid with the view of claiming the prize offered by the Royal Agricultural Society, thus affording another instance of what science is likely to accomplish for us. The proud preeminence of Great Britain in the art of Agriculture has, no doubt, been obtained chiefly by cultivating green crops, in other words her turnip culture; it is within my recollection when the surplus fat stock of the County of Aberdeen, in Scotland, was not more than that produced by our County of Northumberland at present,—now Aberdeenshire ranks the highest county in Britain in the exportation of fat stock. How is this? simply because the cultivation of root crops obtains in a similar ratio, the rotation followed entailing a fifth or sixth part of the arable acreage under green crops of some kind—without the aid of foreign or artificial manure this could not by any means be profitably accomplished, their use has therefore not only become general but almost absolute. The first great step in advance in the cultivation of turnips was the introduction of bones as a manure, the value of which as a fertilizer for this crop appears to have been totally unknown until about the end of last century when their use began in Yorkshire, Col. St. Ledger being the first person known to have used them, about the year 1780. In Scotland bones were not used at all until a very late period. As a manure for turnips their qualifications are abundantly evidenced in the results which follow their application, whilst their special capabilities are equally well established by the relations of their composition and the constituents of the turnip plant; their great certainty of action in a dry season has been observed by all who have ever had the opportunity afforded, and this quality alone would entitle them to the notice of the Canadian farmer, the great obstacle to root cultivation being the aridity of our climate; the influence of the manure upon the crop can be quickened by the form of preparation or the condition in which it is applied. The finer the bones are reduced the speedier their action, as has been fully established by many experiments, and this power of forcing the crop has been made available so as to hasten the period of hoeing ten days or more. As the turnip is a plant which in its earlier growth depends greatly on the manure and is at that period peculiarly liable to attacks of the bug, it follows that the more we have the manure under our control the more likely is our ultimate success, and an early feed of phosphate of lime, which bones can be made to supply, will push on vegetation to that state when it becomes capable of deriving assistance from atmospheric sources. I have been very successful more than once with dissolved bones, using for that purpose sulphuric acid, and although at considerable expence, still not in proportion to the benefit derived from its use. As an auxiliary to barn-yard manure used at the rate of 10 bushels, in dust, to the acre, where 20 waggon loads of dung have been previously well incorporated with the soil, a good crop of turnips, if not otherwise neglected, may be looked for with certainty. Canada is essentially a flesh consuming and consequently a bone producing



country; we must have the means of rendering the heads, horns, hoofs, and skeletons of our winter starved cattle, which disfigure the fair face of nature round many a rich farmer's steading available for the purpose of manure, and thus make the evil cure itself. Probably some may think I place too high a value on the turnip crop, but I am impressed with the conviction that this country will never be really great in agriculture until every farmer produces an abundant supply of turnips, or an equivalent in other roots! and this state of things will only be profitably accomplished by calling to our assistance the aids which science offers to us in artificial manures. I think, Mr. Chairman, that if our Agricultural Societies would offer liberal premiums for the best course of experiments with guano and bones applied to root crops, and furnish intending competitors with a certain quantity of each under certain rules, it would be the means of eliciting a large amount of practical information, as well as a test of their adaptedness to our climate, and on the principle that *seeing is believing* would, I have no doubt, remove much prejudice against a principle which ignorance only has the hardness to deny. I thank you, gentlemen, for the patience with which you have listened to my remarks, those which will follow I trust will furnish complete evidence that the motto of our Club is "progressive improvement." (Cheers.)

MR. JOHN MASSON said—I had an opportunity of getting a large quantity of bones which had accumulated about the kennel where Mr Boulton's hounds were kept, on my farm; these I carried seven miles to Mr. Allan's mill, where they were ground, then I placed them in a heap and mixed with them a quantity of animal refuse and wood ashes, covering the pile carefully with black muck, three or four inches thick, and left them for ten days, in which time the bones were reduced to a fine powder; the pile carefully turned and mixed and immediately applied in drill, followed by the turnip drill. Before or since I have never seen any such crops of turnips in this country, and from this I was induced to repeat the turnip crop the next year, which proved little inferior to the first, a proof that one crop was not sufficient to exhaust the manure. I have been in the habit of using ground bones since 1826, when I first applied them on four acres, part of a twelve acre field, all in turnips, eight acres sown manured with well rotted barn-yard manure; the season, as most of us know, was one of extreme drouth, and I had as many turnips off the four acres as off the eight. It was a serious loss to me when the hounds were sold, bones about the premises got very scarce, and I had no opportunity of getting supplied from any other source.—(Mr. Wade) "I think Mr. Masson was the only one who found the hounds profitable." (Laughter).—(Mr. Masson) I did so, and would willingly have paid additional rent to have them kept on. He could, so far as his experience went, strongly recommend the use of bones for the turnip crop in preference to any other manure, and was quite prepared to state also, that it was the cheapest.

MR. JOHN WADE said he considered that arti-

ficial manures were of as great importance to us if not more so, than in Britain, from the circumstance of our working season in the fields being so short, seldom commencing before the middle of April, whereas in Britain the seeding is always finished, so far as the cereals are concerned, in March, leaving them a full month more than us to prepare their land for green crops, summer fallows, or other operations of that nature, than we have; consequently, we have to perform in the space of six weeks the same operations that they have three months to work upon. And it is on this account that hand manures become of such importance to us, particularly on green crops; when suppose on a farm of say 200 acres, if you grow twenty acres of green crops and break up twenty acres for summer fallow (a fair proportion in a five course shift), this must be all performed in from 3 to 4 weeks: and the usual amount of force commonly employed upon farms of this size is not more than 2 efficient teams, and probably 3 to 4 men. It is found that, supposing we have sufficient manure in our yards to put on our green crops, we have not time at that season to draw it out without neglecting other operations of imperative necessity. Consequently, if guano, bone dust, or any other hand manure of that description, could be procured, the time of putting in our turnip or other root crops would be shortened nearly two-thirds, as it will take two teams nearly a week to draw manure enough for eight or ten acres of ground for roots; and this serious amount of time, at that particular period, would be saved in that way, and be available in any other required. He had tried guano on two occasions with very satisfactory results, and considered 1 cwt. equal to 15 loads barn yard manure. He had not yet tried bone dust, and could not speak from experience of its results. He had used plaster for seventeen years with great success, and considered that it had doubled, and sometimes trebled his crops of grass; the effects in our neighbourhood have been almost like magic; and he could say with certainty that he has realised not less than 300 or 400 dollars a year from the simple application of from 25 to 30 barrels of Plaster, the quantity he commonly used. He had used it on peas, but considered the direct application to the crop rather dangerous in moist or wet summers, producing too much straw; and as he had so long applied it on his farm he found he could get enough of peas from the effect left in the land the second year. Mr. Wade concluded by recommending the Township Society to make use of their funds in importing guano and bone dust, by the quantity, and giving it to the members of the Society at cost and charges. (Cheers.)

MR. GEO. BLACK said that he had not much experience with artificial manures in Canada, but had experienced the good effects of bone manure in the old country. Mr. Blacker, in Ireland, made some experiments with manures on turnips, which may not be amiss to mention here; they were, 1st with pounded bones, 2nd, burned bones; 3rd, peat ashes; 4th, pure cow droppings; 5th, hot lime; an equal part of each being weighed. The result was—No. 1 gave 87 lbs., No. 2, 108,

No. 3, 76, No. 4, 88, No. 5, 54; thus showing that burned bones were superior to any of the others. He used 15 bushels of bones last year on 1½ acres of turnips; the land got a light coat of coarse manure, ploughed in the previous fall; the other portion of the field was heavily manured in the rows with fermented manure, previous to sowing the turnip seed, likewise a quantity of ashes; the turnips on the bones were a good even crop, which he received a prize for, while the other portion was a very uneven crop. He had not used guano in this country, but from experience of its effects in Scotland and in Ireland he had no doubt of its efficacy in this country. As there is a great quantity of animal food consumed in Canada, an immense bulk of bones might be collected; also, from tanneries, horns, hair and other animal matter; there is another source from which, I am sorry to say, enormous quantities of bones might be collected, that is from dead animals; but this last source will diminish as the cultivation of green crops increases. He agreed with Mr. Wright as to the benefit of using salt with plaster on peas. He believed it would increase the yield; the plaster, at the same time, causing a smothering crop of straw. He had used two barrels of salt on land to be sowed with Barley, the same being very foul with charlock seed; it destroyed the charlock, and he had a good crop of Barley; but alongside, where no salt was used, the Barley was mostly smothered with yellow weed. His neighbour, Mr. Geo. Roddick, sowed some salt on part of a field which was very full of this yellow weed, it had the same effect as Mr. Wade had mentioned. The easy, portable, and expeditious manner in which they can be used, at a busy season of the year, certainly in itself is a great recommendation to use them. There are few farmers who can manure the 4th, 5th, or 6th part of their farm yearly, from their barn yards; and without a rotation, and a proper proportion of that rotation being manured, and some kind of green crop cultivated, it is impossible to keep a farm in a paying condition. He thought excellent manure might be had from distilleries; if the droppings of hogs and cattle at these places were preserved and manufactured so that they could be used as hand manures they would be of great value. Also, if the slaughtering of cattle in cities was all done at one shamble in each place, and all the blood and offal preserved and properly prepared, it would be a superior manure. He would recommend in sowing plaster to be just as particular as in sowing grain; every square yard missed with plaster on clover is a forkful of hay lost. M. Black concluded with the following caution: if guano comes in direct contact with seeds it will kill them, it has been proved that bones will not do so.

Mr. WADE recommended the use of a broad cast sowing machine for plaster.

Mr. G. BENNETT said that his experience in the use of artificial manures had been very limited, except in plaster, which he had used with very beneficial results. He had once tried an experiment on corn, with equal parts of gypsum, salt, and wood ashes. The result was a crop of over 70 bushels of shelled corn to the acre. He

could not say whether it would have the same effect on a different soil. His was a sandy loam.

Mr. RICHARDSON thought it unnecessary to take up the time of the meeting. He highly approved of all that had been said by Mr. Black and other speakers on the subject of grain crops and artificial manures.

A vote of thanks was given to Mr. P. R. Wright for his excellent and interesting opening speech.

W. R. RIDDELL, *Secty.*

## REPORT OF THE EAST ZORRA FARMERS' CLUB.

ON CHANGE OF SEED, &c.

March 2, 1854.

A meeting of the East Zorra Farmers' Club was held at Donaldson's Hotel, 12th line, the 2nd March.

The Chairman introduced the subject, saying, it was one that deserved great attention at our hands—much more than it usually received.—Some had already begun to change their seed, but some had been in the habit of sowing the same oats 10 or 15 years running, to save the trouble of going three or four miles to change them; but he thought all seed ought to be changed, oats as well as wheat.

Mr. JOHN SMITH then read as follows:—

I feel sorry that the duty of drawing up the paper for the present meeting should have devolved upon me—a person altogether unfit for so important an undertaking. In making a few remarks upon this subject, I shall first call your attention to the most important part of it, viz., Fall Wheat, which will divide itself into two heads:—1st. The different kinds of fall wheat, and, in my judgment, their respective merits. 2nd. The best mode of preparing such seed for being deposited in Nature's womb—the soil.

First, then, of all the different kinds which have come under my observation in point of yield, red chaff claims the preference, yet it has shown a disposition to rust, on account of being a few days later than some other kinds. With that kind known by the name of *Scipio*, I am best acquainted, having grown it for the last six or eight years, and have found it to stand the winter as well as any other; and being a little earlier than the red chaff, it has often escaped the rust and filled well, whereas had it been a few days later, it would have been comparatively worthless; yet it is more liable to sprout in wet weather. The *Soules* wheat is not so much known, having been grown but two years in the neighborhood. In 1852 it showed a disposition to rust, but in '53 it was very good,—but the season has been favourable. The *White Flint* has not given satisfaction—it inclines to lodge or lay down, and also to rust. The *Blue Stem* has been twice grown with us—has not rusted, has yielded well, and has the name of standing a wet harvest well.

I now come to consider the next proposition, viz., the best mode of preparing the seed. The first is Canadian or American, and consists in dipping the wheat in ley made from hardwood



ashes, sufficiently strong to bear an egg; the second is brine of the same strength; the third is urine of the same strength. Now, the best mode of application is to take a large kettle or pine tub, fill it with the selected liquid, then take a bushel basket and put it to the bottom of the kettle or tub containing the liquid, pour the seed gradually into the basket; skim it well, and dry it with lime. But lastly, there is another and a better preparation, viz., good clean seed, fully ripe; this is Nature's infallible law, and proclaims itself throughout the whole vegetable kingdom, viz., that those seeds or nuts that are sound and fully ripe, are most sure to reproduce a fair specimen. But another most important consideration immediately connected with the successful growth of all grains, is the judicious selection and frequent change of all seeds from light sandy and gravelly soils to heavy, strong loams, or even to clay. I would also recommend those changes of seeds and soils in cases where it may be possible, to be from cold to warmer parts of our climate, or from north to south.

With regard to Spring wheat, various kinds have come under my observation. For some years past the *Siberian* wheat waxed and waxed, and is now no more. Next came the *Bearded Club*, and some years it was exceedingly productive, but its days are numbered and it is no longer patronized. The *Italian*, a bald-head species of Spring wheat, had its day and admirers, but like its predecessors it is out of date. A kind of Spring wheat known as the *Shell Wheat* has been and is still held in high estimation, as it seems well adapted to our soil and climate, but at the present it seems outrivalled by another kind known as the *Scotch* or *Fife Wheat*, which till the present has defied the power of rust, and is highly applauded by the house-wives. The millers say it is hard to grind. It has been known to yield 30 bushels per acre.

With regard to oats little can be said, inasmuch as there are so few kinds within our reach from which to select, and when selected there is little or no preparation required. The *Potatoe* oats are a fine looking sample, but are so liable to degenerate that they are not generally patronized. The *Yellow Golden* oats have their admirers and may answer well with some, but have not with me; they are said to be late in ripening. There are two kinds of black oats and of the common white oats, but in my opinion it would be better to turn our attention to securing other and better selections. Peas, demand our utmost attention, inasmuch as they are likely to be the very basis of our agricultural productions; as their successful cultivation forms a good preparation for almost every other crop. The best variety, in my opinion, is the *White Marrowfat*, if sown on Spring ploughing, as they are large and difficult to cover, and if sown on fall ploughing should rather be put in by a cultivator or by a light ploughing.—The small *Dints* or *White* peas answer very well on the farm, but are not in so good demand in the market. The selection of a good clean sample of either or any kind, together with frequent changing, will be found highly advantageous to the practical agriculturist.

The above remarks, feeble and inefficient as they are, I leave, Mr. President and Gentlemen, to the consideration of those more practically acquainted with the subject.

Mr. GRAFTON SMITH had found changing seed very beneficial. A few years ago he had brought some red chaff wheat from the plains, which gave about 30 bushels to the acre, but the second year it was a failure, and rusted. Last year he had sowed Scipio wheat, which answered well; it did not rust, and bore well. Blue Stem wheat seemed not good—the straw being bad. He had seen a field sown half with the Scipio and half with the Blue Stem: the Scipio had been sown three or four years running on the same farm, the Blue Stem was a change of seed—and the Scipio did the best. Peas he had sown for 11 years, both the marrowfat and the small white, but the small white paid the best; it was very necessary to change the seed—for if not changed, some get grey and do not ripen at the same time as the others. This last lot was very good and he had had the same seed for five years, but this year some turned grey and came late into season. Oats require change of seed as well. Potatoe oats soon degenerated; and he had tried the black Maine oat, but they had no straw. The yellow and black common oats are liked best, and they grow good straw. As for potatoes, he preferred pinkeyes, but some sorts gave a more plentiful return, such as Irish cups, which gave much larger crops. Turnips he had cultivated largely, and thought the purple Swedes the best; mangels also had done well with him.

Spring wheat he had sown every year, and of all sorts. He had a sort called Scotch, which weighed 63 lbs. to the bushel, and made as good flour as the best fall wheat. Last year his was got in, in a bad state, from the wet weather, but it turned out very well, and never rusted to his knowledge.

Mr. DALE steeped his fall wheat in chamberley, salted, and limed as well. He sowed two bushels to the acre, and always got fresh seed, changing from light land to strong land, and from heavy to light, and always changed to better land. He once saw a man who had got what he called a very fine sort of wheat, and got some of the Scipio to match it, but the Scipio came out 14 days earlier, and grew 10 bushels more to the acre than the bald wheat. He always grew the Scipio himself, and it did well when sown well. As for spring wheat, he had tried both Club and Scotch wheat together; the club wheat was poor, the Scotch yielded 25 bushels to the acre; it seemed to turn bad in growing, but came round in time to yield a good crop, and he would sow it again. His first peas were the small white dints, and he had also sown the marrowfats. He had tried them both in the same field. The straw they gave was about equal in quantity, but the small early pea bore one-third greater crop to the acre. Oats he had tried a good deal. When in England, he and another man, had got some of the black Tartarian oat; he got 70 bushels to the acre, so he tried them again, but they degenerated, for the straw was small and the head short, and they gave no more than 25 bushels to the

acre. Had tried the white Tartary oat, and they did well. He grew from 40 to 50 bushels of white, but only 30 of black, but black he thought might answer on wet loamy land. Sow them together on moderately good land, and the white would be much the best. Irish cups were the best potatoes he knew, either in England or here, but they were very scarce. Of turnips, one ought to grow two sorts, the white for fall feeding and the Swede. The seed required for the different grains was, for wheat, either fall or spring, two bushels; some say one, some 1½, but ~~two are~~ a little enough; many an acre was missed by the seed being too thin. Oats ought to grow thick; not two bushels, for then they grow tall and thin, but four bushels were required to grow a crop properly.

The Secretary had grown forty bushels white from two bushels seed, and the straw was very heavy, but it was on a very worn out foul piece of land that required a fallow to bring it into any sort of order at all, and was not fit for wheat; so, perhaps, they got better treatment than oats generally got.

Mr. TURNER thought white oats grew more to the acre, and did not shell out so much in carrying. He had sown black oats a good deal, but preferred the white, as they grew ten bushels more to the acre.

Mr. FRAZER found the black oats did best for him. He had grown the potatoe oats, but his land being low and wet, they grew rank and lodged. He had tried the black Maine oat too, but the common black oat did the best for him. He had sowed three kinds of wheat this year—red chaff, Scipio, and another sort; they were all equal. He was quite sure potatoe oats ran to straw too much in heavy soil.

Mr. DONALDSON considered Mr. Smith's plan a very good one, and would always change from light soil to heavy, and from heavy to light. He had always found the Scipio wheat the best for his farm, and Scotch wheat made the best spring wheat, yielding most to the acre, and to the bushel. As for oats, he preferred the black Canadian; had tried the potatoe oats, but in two years it degenerated, and one loses one-third in cutting it, if not very particular. He thought land might be injured by sowing too much seed as well as too little, and three bushels was enough if every plant would grow, though of course it depended on the quality of the seed. He preferred the Swede before any other turnip, for he had never seen the globe come out so well here as in England, but the Swede he had seen quite as good. His friend Mr. Jackson has produced this year as good a crop of turnips as he had ever seen in England. Mangel wurzel, he thought, could be raised better, heavier and cheaper than Swedes. He had sown the blue pea, but in two or three years they degenerated into a grey pea. Had tried marrowfat and white peas, and the white grew much the heaviest crop. He preferred the pinkeye potatoe, for though not the heaviest crop, they were much the best for the table.

The Secretary here remarked that though mangel wurzel were nice sweet roots, they were bad for cows and ewes in the spring, producing a

large flow of very poor milk, which did not nourish the calf or lamb, being little better than water; and in the case of the ewe, distending the udder unnaturally, and the lamb being unable to take it all, curdling in the bag, and bringing on inflamed bag, and all its concomitant diseases. It was very well where quantity was all that was required, but not otherwise.

The Chairman said that though we thought ourselves wiser than our forefathers, and perhaps were so in many things, they had still left us the golden rule of changing the seed. The advantage of the Scipio wheat was, that about the end of June, when the rust struck the wheat, the Scipio being an early sort, was past the danger.

Mr. COOKE had always grown the Scipio wheat, and had never changed the seed, but had sold some for seed wheat on account of its goodness. He took great pains to clean his seed, so as to drive out all the chaff. He had sown potatoe oats last year, and had taken the first prize, as his weighed 43 lbs. the bushel; and in consequence of cleaning his seed oats well the last two years, he had grown much better crops. He had got tired of sowing marrowfat peas, and getting back scarcely the seed, and had sown the small white pea for seven or eight years; they certainly changed their colour, but they fed the pigs quite as well. Turnips he did not raise much; but he had good crops of potatoes, and had twice taken the first prize with them. Some talked about cutting and picking, but he planted whole ones. Last year he had picked out all fair-eyed potatoes for seed, but saw no difference from when he planted them all just as they came to hand.

Mr. G. SMITH had picked some of his best pinkeyes last year, and planted them whole, in the same field with his cut sets, placing them in the best ground and giving them every advantage, for he wanted some show potatoes. At first they grew better and looked better than the others, but after all turned out the lightest crop, being too full of roots and tops.

The Chairman mentioned he had some very fine potatoes once given him by a man who passed his gate with a team, called Mashanics, but by planting them year after year they had come to something very like pinkeyes.

Mr. GRAFTON SMITH thought dressing wheat for smut of no use; his brother dressed his, and he did not, and there was never any difference in their crops.

Mr. DALE had once got in 16 bushels of wheat from one man, which he sowed in three different lots; the first two were dressed for smut, the third was just soaked in ashes and water, and it was covered with smut, and it was only sown five days later than a seven acre field that showed no signs of smut.

The Chairman then, in summing up, regretted he would not have an opportunity of meeting the members of the Club again this winter, for this would be their last meeting. He trusted, however, that what had been said would not be entirely without effect, but would be of benefit to all. He felt deeply the honour of presiding over such meetings of able and intelligent farmers,



and hoped, though no one knew what might happen, that we should all be able to meet again some future day.

A vote of thanks was then passed to Mr. Smith for his paper, and to the chairman and secretary.

#### HUNTINGDON TOWNSHIP SOCIETY.

At the annual meeting of the Directors and members of the Branch Agricultural Society of the Township of Huntingdon, held in the Town Hall on the 21st day of January, 1854, the following office-bearers were elected.

P. Luke, Esq., President; Walter Sryver, Vice-President; Thomas Baker, Secretary; Owen Ketcheson, Esq., Treasurer.

John McCaw, Henry Ketcheson, James Foster, Henry Ostrom, James Archibald, Esq., Simeon Ashley, Philip Ketcheson, John Wood, Thomas Graham, and Nesbit Reid, Directors.

The Annual Report of the Office-bearers and Directors of the Society for the past year was then submitted to the meeting, together with the following remarks:—

We are happy to state that the financial affairs of this Society are in a prosperous condition; and we beg further to remark that the advantages arising to the community at large from the establishment of Agricultural Societies in the several Townships are not properly estimated by those who are not members of those Societies. From our own observation we believe them to be a benefit in a greater or less degree to all the Agriculturists of the vicinity, and varying, as the beholder is blessed with intelligence and means to appreciate and use, the improvements which must necessarily follow their establishment.

We feel justified in saying that there is a decided improvement in the mode of performing agricultural labour in the Township since the establishment of the Society; and that our last Annual Show of horses, cattle, sheep and swine proves fully that our agriculturists have exerted themselves to introduce stock and seed of a superior description. A number of visitors and buyers who attended our show, expressed their surprise at the quality and quantity of the stock and grains exhibited, and persons who have visited other township shows, state that we are not behind many more favoured localities.

Our list of premiums, although necessarily small, shows that those who have taken pains to forward the Society have not been wholly without profit. The exhibition of Domestic Manufactures and dairy produce proves that farmers' wives and farmers' daughters have resolved not to be left in the back ground in general improvement.

The vegetables exhibited exceeded all expectation for quantity and quality. The Swede turnip, rutabaga, carrots, beets, cabbage, and potatoes could not be surpassed, although the past season was a very trying one of long continued growth. We would recommend agriculturists generally to turn their attention more to the culture of green crops, as the climate and soil of this section of

country is well adapted for their growth, and as they prove exceedingly beneficial to all domestic animals during the long, tedious winters they have to encounter.

But whilst we endeavor to draw your attention to the benefit arising out of what has been done by the Society, we would wish to press more forcibly on your notice the fact that much still requires to be accomplished. You will bear in mind that the past season has been severe on all kinds of grain, and we should, as far as practicable, adopt such measures as will prevent our lands from being so much affected by either the continued droughts or rains which frequently cause such a fearful diminution in the produce of our crops. We would earnestly recommend you to turn your attention to the improved system of cropping by rotation, now successfully used by the best farmers; and by draining, deep ploughing, and a judicious use of manure, make your lands and crops less liable to be affected by the changes of the weather.

In conclusion we would earnestly entreat you not to rest satisfied with what has been done, but continue in the onward course, saying "We have only BEGUN." If you expect to succeed as you ought, you must read, study, observe, compare and make the application.

#### COUNTY OF OXFORD AGRICULTURAL SOCIETY.

The Directors of this Society are taking energetic measures to make it useful to the County. Three hundred copies of the subjoined Circular have been issued by them, accompanied by a form of a subscription list, and with a request that the person to whom the Circular is sent will use his influence to get subscribers to the Society. Such a plan is well adapted to secure a large number of new members, and is worthy of imitation by other Societies. The Circular contains a good deal of interesting information in reference to the affairs of the Society, and is as follows:—

*To the Members of the County and Branch Societies, and all friends of Agricultural Improvement in the County of Oxford:*

GENTLEMEN,—It is gratifying to observe the large number of Agricultural Societies which have recently been established throughout this Province. These and other agencies are silently but steadily awakening the best energies of our population. The prospects of the country continue to improve. The high prices being obtained for every kind of farm produce encourage the Farmers to bring their land up to a higher state of productiveness, and to aim at the introduction of the more valuable kinds of stock. All are becoming alive to the fact that it is almost the same trouble and expense to raise a common animal as one of the greatest value. A general anxiety prevails to get improved stock. It is the princi-

pal object of our Agricultural Societies to aid the farmer in accomplishing this point. Combined efforts will effect what may be beyond the reach of enterprize. How much has the Highland Agricultural Society done for Scotland? Whether we regard the magnificent stock of every kind and description to be seen at their annual exhibitions, or the vast variety of Implements ingeniously designed to save labour, and enable the farmer to do his work in a more efficient manner, or whether we look at the results of the superior husbandry practised in that land, it must be remarked that under the fostering influences of such Societies, British Agriculture has reached its present eminence to become a model for the world's imitation.

It augurs well for the future greatness of this fertile country, that it has already commenced to manifest the same spirit and zeal for improvement. The Provincial Exhibitions during the last two years bore abundant testimony to the enterprize of its inhabitants, and while the different Branch Societies around us are prospering and striving which shall do the most good, the Directors of the Agricultural Society of this County would desire to see its sphere considerably extended. Under the provisions of the Statute, two-fifths of the government appropriation are retained for its support and the Directors cherish the hope of seeing such an accession of new members this year, as will enable them to issue a much larger list than heretofore; but this will depend upon the success of their present efforts. Proper time and attention shall be given to the management of its affairs, to prevent the existence of any just grounds of dissatisfaction, and every care shall be taken to secure for the annual Show, competent judges, whose decisions may be relied upon as just between the different competitors. The County Society owns at the present moment five Bulls, viz.: two Short-horns, two Ayrshires, and one Hereford, which will be hired out for the season on the day of the Spring Cattle Fair. The latter, it will be remembered, took the first prize at the Provincial Show last year. With respect to the recent purchase of the *Suffolk Punch* for the sum of £300, by the County Society, the Directors would claim permission to give a brief extract from the report of the last Exhibition of the Royal Agricultural Society of England, merely to show the high estimation in which this breed of Horses is held there:—"The first prize Stallion at the last Show held at Gloucester was a Suffolk Horse of very great power. He was active and muscular. The neck rather disproportionately short, and the head large. The bones of the legs were thin and flat, with large joints and broad caps—all signs of bodily vigour. The colour characteristic of the breed—chestnut. The body very compact, close and well ribbed, coming quite up to the character of the *Punch*."

The Directors hope that their new purchase will give general satisfaction, and would state in conclusion that their only desire is to aid in every possible way to render the Society useful in the Country. Is it not truly the interest of all the leading farmers of this great Agricultural District to support their own County Society? Annual

subscription to the Society, 5s.; annual subscription, including the *Agriculturist*, 7s. 6d. The Directors confidently hope to see a large portion of the valuable improved stock, now to be found in every Township of this County competing at the next annual Show of the Society.

GEO. ALEXANDER, *President*.

JAMES SCARFF, *Secy., C. O. A. S.*

Woodstock, March, 1854.

## Communications.

### ON THE EDUCATION OF FARMERS' DAUGHTERS.

(Continued.)

To the Editor of the *Agriculturist*:

Second: School education should not be allowed to interfere with urgent claims of humanity. The writer of these lines has known cases, while residing in the State of Ohio, in which the sick have labored under much inconvenience, and in some instances absolute want of attention, not because there were not persons enough in health to take care of the sick, but because those young persons, who might have attended to this necessary duty, must be kept constantly at school. Now, when urgent claims of humanity, like the above, are unattended to, and the sick left to suffer or perish for want of care, because school education must not be interrupted, it appears to me to be carrying matters a little too far; besides, a young female, in learning to sympathise with the afflicted, and in administering relief to the sick and dying, is pursuing a proper education, much more effectually than if kept all the time at school, to the neglect of the afflicted.

Third: Education should be so conducted as not to foster habits of indolence. Almost every farmer knows, that if he gives his son an extended and liberal education, as school education is generally conducted, such education indisposes him for the labors of the field. And almost every farmer's wife knows, that if she sends her daughters to a female academy, for any great length of time, they become indisposed for household industry and domestic economy; and this seems to the writer, not an accidental, but a natural and almost necessary consequence, for the sedentary life of the scholar induces that physical debility which unfits him for the labors of the farm or the house. Besides, school education must generally be acquired at the precise period when the physical energies require exercise, that they may acquire that power of endurance which renders labor a delightful employment. The inference is, that mental education, and habits of industry must be acquired at the same time. From the above remarks it may be presumed, that I am greatly in favor of what are called manual labor schools, where the student devotes a certain portion of his time to agriculture or some mechanical art, and the rest to study,—thus acquiring knowledge, bodily health, power of endurance, and habits of industry at the same time.

A most interesting report appears in the *Agriculturist* of last year, page 339, from the Normal



School Experimental Farm, but it does not appear from said report, whether the work was, or was not, done by the students; if done by the students, the interesting nature of the report is increased by that circumstance an hundred fold.

What is true of male is also true of female education: mental cultivation, habits of industry, and the power of performing labor without too much fatigue, must be acquired together. All persons entrusted with the instruction of youth, should carefully instill into their minds, an abhorrence of uselessness and idleness. They should be taught that useful industry is honorable and christian, and that "The diligent hand maketh rich." But, after all, it cannot be expected that they will love labor if their health is debilitated by excessive study, so that they cannot perform it without enduring a great deal of fatigue. The question occurs here, can any plan be devised, by which females can acquire mental cultivation, physical energy, and habits of industry at the same time? The following plan, or something like it, would, in my opinion, be attended with advantage:—

Let young females who attend seminaries be obliged to cook for the establishment by turns, under the superintendence of an experienced cook. In the same way let them be obliged to do their own washing, under the superintendence of an experienced laundress. There should be also attached to each female seminary a garden, of sufficient extent, in which the young ladies might cultivate, with their own hands, such flowers and fruit as they delight in, under the supervision of an experienced gardener. By this means, or something like it, young females might acquire mental cultivation, bodily health and vigor, and habits of industry at the same time. Without some such plan, young females will often leave a seminary—as they have often done before—fine, lily-fingered, accomplished young ladies; capable of parsing grammar, speaking French, drawing, understanding music, and dancing, but being indisposed for domestic industry, do but little besides dress, attend parties of pleasure, go to balls, and read novels; while their mothers, and less favored sisters, must wait on them. When a young farmer chooses a wife, he wants, not an idol to be worshipped, nor a fine lady to be taken to balls and parties of pleasure, but a "helpmeet," one who is willing to share with him the joys and sorrows of life. Most readers of your paper, will subscribe to the following stanza, from the *Agriculturist* for the year 1848, page 34:—

Show me the wife that's on the watch,  
For every little rent or scratch,  
And cures it with a timely patch  
Before you know it;  
She is a woman fit to match  
A lord or poet.

And she is fit to match, not a lord or poet only, but a much more useful class of men than either, namely, farmers. The world can live on without lords or poets, but without farmers it cannot subsist.

A fine description of the results of a good education, is found in Proverbs of Solomon, chapter 31, 10th and following verses,—and as many of your readers may not be so familiar with the

above author, as they should be, I shall transcribe it for their instruction:—

Who can find a virtuous woman? for her price is far above rubies.

The heart of her husband doth safely trust in her, so that he shall have no need of spoil.

She will do him good, and not evil, all the days of her life.

She seeketh wool and flax, and worketh willingly with her hands.

She is like the merchants' ships; she bringeth her food from afar.

She riseth also while it is yet night, and giveth meat to her household, and a portion to her maidens.

She considereth a field, and buyeth it; with the fruit of her hands she planteth a vineyard.

She girdeth her loins with strength, and strengtheneth her arms.

She perceiveth that her merchandise is good: her candle goeth not out by night.

She layeth her hands to the spindle, and her hands hold the distaff.

She stretcheth out her hand to the poor; yea, she reacheth forth her hands to the needy.

She is not afraid of the snow for her household; for all her household are clothed with scarlet.

She maketh herself coverings of tapestry; her clothing is silk and purple.

Her husband is known in the gates, when he sitteth among the elders of the land.

She maketh fine linen, and selleth it; and delivereth girdles unto the merchant.

Strength and honor are her clothing; and she shall rejoice in time to come.

She openeth her mouth with wisdom, and in her tongue is the law of kindness.

She looketh well to the ways of her household, and eateth not the bread of idleness.

Her children arise up, and call her blessed; her husband also, and he praiseth her.

Many daughters have done virtuously, but thou excellest them all.

Favour is deceitful, and beauty is vain; but a woman that feareth the Lord, she shall be praised.

Give her of the fruit of her hands; and let her own works praise her in the gates.

When female education is conducted properly it will produce such examples as the above, not, perhaps, uniformly, but certainly very often. The character described above is virtuous, pious, charitable, wise, industrious and economical. A faithful wife, an affectionate mother, and a kind neighbor. It is sometimes objected against farmers, that they are indifferent to the claims of education, but let our educational establishments give promise of producing such examples as the above, and then will our farmers see it to be their interest to support and encourage them.

To be concluded in my next.

AN OLD FARMER.

Yarmouth, March 2, 1854.

#### FARMERS' DAUGHTERS.

Up in the early morning, just at the peep of day,  
Straining the milk in the dairy, turning the cows away,  
Sweeping the floor in the kitchen, making the beds up stairs,  
Washing the breakfast dishes, dusting the parlor chairs;

Brushing the crumbs from the pantry, hunting for eggs at the barn,

Cleaning the turnips for dinner, spinning the stocking-yarn,  
Spreading the whitening linen down on the bushes below,  
Ransacking every meadow, where the red strawberries grow;

Starching the "fixens" for Sunday, churning the snowy cream,  
Rinsing the pails and strainer down in the running stream,  
Feeding the geese and turkeys, making the pumpkin pies,  
Jogging the little one's cradle, driving away the flies;

Grace in every motion, music in every tone,  
Beauty of form and feature thousands might covet to own,  
Cheeks that rival spring roses, teeth the whitest of pearls,—  
One of these country maids for a score of your city girls,

LETTER FROM THE PRESIDENT OF THE PROVINCIAL AGRICULTURAL ASSOCIATION.

L'Original, 4th April, 1854.

DEAR SIR,—Permit me through you to trespass on the pages of the *Agriculturist*, which are filled with most interesting matter to the farmer generally.

As the season for seed sowing is drawing near, I feel anxious to make some suggestions, which have for their object the inspiring of a greater degree of emulation among all farmers, and especially those who are proprietors of small farms of one hundred acres each, and also raise a spirit of rivalry among our population to induce them to pay more attention to the cultivation of vegetable gardens.

When I take a retrospect of the Province and see the rapid advancement it has made during the last thirty years, it is gratifying in the highest degree to all who have participated in bringing this noble country forward.

The noblemen who have been sent out to this Province from time to time to rule over it and guide its destinies, have rendered great service to this important branch of human industry in which we are engaged.

Since the formation of the Canada Company, under the auspices of the late Mr. Galt, assisted by Dr. Dunlop, it has been indefatigable in bringing out agriculturists and artisans to this country, and in improving the Agriculture of the Western part of Canada. Since that period all of its commissioners have been entering in their exertions, particularly Mr. Widder, to advance the agricultural interest of the Province at large, and they have adopted the wisest and most judicious modes of effecting this great object. Mr. Street, our President for the year 1852, has done much for the improvement of horses, and also by his judicious advice; and Mr. Matthie of Brockville, the President for 1853, has contributed by his exertions in his own county, much to improve the character and quantity of the produce of the grain, and has done much to create a degree of emulation in many other branches. The praiseworthy examples set by these gentlemen, I wish to see followed by one or more individuals in every County, irrespective of their position as President.

I have in a former communication adverted to the favourable results to Canada from its representation at the Crystal Palace in 1851, and from the exertions of Mr. Logan, our Provincial Geologist, and several other gentlemen, and it would be inappropriate to advert further to that subject at present.

You will pardon me for saying that I think few individuals have done more for the advancement of Agriculture, than yourself and Professor Hind of Trinity College, and I am also of opinion that the University of Toronto has just claims upon the public. I read with no ordinary degree of satisfaction the announcement that the Hon. J. H. Cameron had endowed two Scholarships in Trinity College, Toronto, and I trust that this laudable course will be followed by gentlemen of wealth in favour of every college and literary institution in the Province.

After reviewing the liberality of others, and especially that of my predecessors in the office of President of the Agricultural Association, I fear I shall be charged with inconsistency, when I feel bound to decline following the example which has been set me by some of them.

On declining a re-election to the Presidency of the County Agricultural Society, after having filled that office for sixteen years, I feel anxious to supply a deficiency in our own immediate vicinity, by offering premiums to the amount of twenty-five pounds in our own County and Township Societies, and it is my opinion that when it is considered incumbent on the President always to come out with a considerable sum from his own private means, it has a tendency to exclude many persons of great practical knowledge who could fill the chair with much greater benefit to the Association and to the country at large, than it has been in my power to do; and the sacrifice of time which is necessary to fill the situation, is all that should be required of them.

With this apology, I beg to make the following proposition, and I would feel pleased if gentlemen in other sections of the Province would sanction it by adopting the same course. As our County Society has within its limits four Township Societies, I propose to offer five pounds to each Township Society, subject to the direction and approval of the Agricultural Board and Association of the Province, to the best farm within each of the four Townships, comprising our County Society, the farm to contain one hundred acres of land and upwards, including its wood land, the competitors to be members of either County or Township Society, and the premiums to be awarded by the experts or judges of one of these Societies. That the ground on which the premiums be awarded be the best fenced, ditched and cultivated farm, producing the greatest amount of Agricultural produce with the least amount of hard labour.

Also a premium of one pound five shillings to be awarded to the best vegetable garden in each Township, containing not less than one-fifth of an acre of land, and generally to be laid out in a rectangular form. Neatness, variety and value of its productions being the basis on which the prize is to be awarded. The great object of these prizes to be the encouragement of farmers and farmer's sons.

The Agricultural Association is requested to furnish through its Secretary, the minutiae upon which the foregoing premiums shall be awarded.

I am, dear Sir,

Your most obedient servant,

CHAS. P. TREADWELL.

GEORGE BUCKLAND, Esq, Professor of Agriculture, and Secretary to the Agricultural Association of Upper Canada.

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MEASUREMENT OF HAY IN BULK.—Multiply the length, breadth and height of the hay into each other, and if the hay is somewhat settled, ten solid yards will weigh a ton. Clover will take 11 to 12 yards to a ton.



## Agriculture, &c.

### PRIZE ESSAY ON BUTTER MAKING.

BY MRS. TRAIL.

(ABRIDGED.)

If bread be the staff of life as it has most emphatically been termed, *butter* is certainly one of its greatest luxuries; it is the best substitute for meat that we possess, it enriches and improves many articles of food, in the form of cake, pudding, pastry, savoury dishes and sauces, to say nothing of its commonest, simplest, and most wholesome accompaniment to our table in the form of bread and butter.

Before entering upon the decidedly practical part of the business I will venture to make a few preparatory observations. It is a common saying in Cheshire, "It is not Cheshire cows, nor Cheshire dairy-maids, but Cheshire meadows."—Many expert dairy-women have told me that food and warmth had more to do with good cheese and butter than their labour, always supposing that cleanliness and a certain knowledge of the commonest nature was attended to. The difference both in quantity and quality of milk must depend a great deal upon the uniform treatment of the cows and the nature of their food. Those animals that are made easy and comfortable in respect to food, drink, and warm sheltered yards and sheds will give a better return than such as are compelled to wander far in search of milk-giving nourishment, and this stands to reason, the beast has to feed to supply its natural wants as well as for milk.—The first, nature will supply as requisite for the life of the creature, and if the supply be not sufficient, less of the nourishment will go to make milk. Now the *feeding* and *general* management of the cows of course lie more with the farmer than his wife; a woman cannot choose the pasture, attend to the putting up winter sheds or fencing in yards; those that do are stepping aside out of their own natural department.

I do not hesitate to say that in this country the efforts of the women are not always seconded as they might be, and as they ought to be. Were the Canadian farmer to bestow a little more attention to the comforts of the milk cows, the process of milking would be carried on with a smaller amount of physical suffering to the females of the family. The cow yard in Canada is seldom the warm, cozy place that it is in England and Scotland; though the greater severity of this climate renders such care more needful both for the cattle and the milker.

While the horse, the working oxen, and the sheep, are fed with oats, hay and roots, the poor cows receive only dry straw and the refuse of the yard, the milking cows sometimes get a portion of hay, but those which have been starved into dryness or are in calf, are often left to shift for themselves through the long months of our inclement winter and capricious chilly spring.

This want of proper generous treatment is the fruitful cause of disease and death both before

and after calving. Another very material thing is the neglecting to supply the cattle with water from tank or pump, or by driving them on a path where they can obtain access to a neighbouring spring.

The want of succulent food during the long winter is one of the causes of a deficiency in the butter producing qualities of the milk. Where roots such as good sound turnips cannot be had, the deficiency might be supplied by boiling oats with a good quantity of water, a quart of oats thus given morning and night, will keep a cow in good order with her ordinary food, and greatly increase the quantity of her milk, or bran mash made thin with boiling water left to cool down, twice a day, with a handful of salt once a week, will tell well; some of the careful wives of the small farmers, will take the trouble of boiling a lock or two of hay with water sufficient for a good drink; but I should think the boiled oats or the bran, or a handful or two of Indian meal boiled in water would be preferable, as affording nourishment as well as milk. Having thus far spoken in behalf of the treatment of the animals, as respects their food and general comfort, I would next observe that regularity in the time of milking is of great importance. In the morning as early as possible, the milking hour should be established, that the cow may go forth to feed *while the dew yet lies fresh upon the herbage*. This is of great consequence in the hot dry summer weather. It is soon after sunrise in the early spring time of the day, while the grass is wet with the clear refreshing dew of night, that the beasts of the field shake off their slumbers and rise to feed, they can then afford time to lie down in the shade during the noonday heat, for a minute and digest their food. A little occasional fodder given cows to encourage them to return to their usual milking place, will generally ensure their constant coming home, they should then not be kept waiting but be attended to at once. I have known much loss of time caused by the looking up the cow, loss of milk and butter, and what may sound strangely to some persons, *loss of life*. How many of the children that have at different times been lost in this Province have been sent out in the forest to seek for the cow, and straying from the beaten path, or bewildered by converging ones, have returned no more to their home but have perished miserably.

Cows can be taught to come home at the sound of a horn, and if food be given them at such times, the habit will be early established. I have known this practiced in Canada, and I have heard that it is common in the pastoral countries on the continent for the herd boy to collect his cattle in this way, no doubt the shepherd's pipe was used for this purpose, as well as for the shepherd's own amusement. I have heard of cows coming home in towns regularly at the sound of a factory bell, which they learned to regard as a signal for the milking hour.

The coolness in summer and warmth in winter of the dairy, are two most essential points to be considered in the making of good butter. The dairy maid may be skilful and orderly, and yet if the place in which the milk be stored is

not perfectly cool and airy, her labour will do her little credit; with her superior knowledge she may make a *better* article than some of her neighbors, but not the best. In this country the dairy women often work under the greatest disadvantage. Frequently she has nothing better to keep her milk in, than a close damp cellar or root-house, where to preserve thorough ventilation is impossible, without proper utensils and conveniences for carrying on the process of the dairy, complete success can hardly be expected. Instead of being surprised that there is so little really fine butter sent to market, the wonder should be that under such disadvantages there is so much. Let the men look to the providing of a suitable place where the work of the dairy can be carried on, and the result would speedily repay the cost and labour bestowed upon it. The space allotted to the dairy is generally too limited, it should be large enough to admit of thorough ventilation, and room for carrying on the necessary work of churning, cheese making, &c. A sunk floor well paved with brick or stone, and a covered drain and grating are advisable to carry off any moisture; the floor can then be kept cool in hot weather by throwing a few pails of water down, which is a constant practice in the dairies of the home-country. I have seen dairies built with good stone foundations, and the walls of squared cedars placed upright, forming a thick compact building, the windows latticed and each window supplied with a wooden shutter which could be lowered at pleasure to exclude the sun, wind, or rain; by this simple arrangement the sun's rays need never have access to the dairy. A porch with shelves and a bench is also a great convenience, on which the empty pans, trays, pails and tubs, can be set up to dry after scouring.

Pans of thick glass are much used in home dairies, also pans lined with zinc and a species of enamel, such as the iron stone pan, and preserving pans are coated with; trays of wood about four inches in depth with pegs for letting off the milk used to be much the fashion, but I think wooden ware is liable to crack and warp during the hot weather, and is less easily cleaned from the sour particles of the milk.

With respect to the churn a small volume might be written on the different kinds; in my opinion the simpler the machinery the better. The old fashioned upright churn worked with the staff and cross dash may be as effective in the end, but it imposes a greater amount of labour than such as are worked with a winch. The simplest churn and one that I have heard much praised by very good dairy-women, is a box churn, the sides of which are sloped so as to leave no acute angles and corners, always difficult to keep clean; the sides are provided with dashers, and a dasher is also affixed to the beam of the handle which passes through the churn, this can be unscrewed, the butter-milk is drawn off by means of a plug-hole near the bottom of the churn. I have also seen a churn with an iron wheel turned with a winch which is very easy to work. There is the old barrel churn which is also simple and effective. The advantage of this last being that

the butter can be washed before being removed from the churn ready for salting. Earthenware pots or good stoneware jars are best for storing the cream in, with each jar there should be a clean smooth wooden staff for stirring the cream; this is a matter that dairy maids pay little attention to, and yet it is of some importance in thoroughly mixing the cream together so as to prevent any sour milk or whey from settling below, thus giving a disagreeable taste to the whole mass of butter. Those persons who churn the fore-milk of the cows only, often keep it in the churn, but this I think is apt to injure the flavour of the butter. In cool weather scalding the cream just before churning, greatly facilitates the churning and obviates the necessity of putting hot water into the cream, a practice in very common use but which I believe is highly injurious to the richness, and good colour of the butter, giving it a white, greasy, poor appearance. In the winter season the cream jar should be brought into a warm room over night, which will thicken the cream and bring it to the required temperature for churning, frozen cream will make frothy butter, or no butter will be obtained after much labour. In hot weather the churn should be allowed to stand some time with cold clear water in it, and if the weather be very hot immerse the churn in water; if a plunge churn be used it can be placed in a tub of cold water during the churning; many excellent dairywomen are in favor of churning cream and stripping, while others prefer the cream only. I think myself that the richest butter is produced from the cream alone, but possibly a larger return may be obtained from the former practice.

Where cows are fed on turnips, a small quantity of salt petre dissolved in a little water and mixed with the cream before churning, is said to remove the flavour of the turnips from the butter. I knew a farmer's wife who always practiced it in the winter season. This same person who was celebrated in the part of the country where she lived for good butter, used during the hot weather to put half a-pint of cold spring water into each of the milk pans or trays when she set them out to raise the cream, and in winter she put the same quantity of boiling water to raise the temperature for the same purpose.

Many approve of the Devonshire and Cornish plan of scalding the milk. Careless servants are apt to let the milk get *overheated*, which decidedly injures the flavour of the butter, but very good butter no doubt is made by heating the milk, and the largest amount of cream is raised from the milk. It has another advantage, that of keeping the skimmed milk sweet for the use of the family.

In a North Lancashire paper, I saw the following advice to dairy-women, which, as it is easily tried I will insert. "Heat two pans of the same size with boiling water, let them stand a few minutes, then pour off the water, and pour in the new milk, cover the pan that has the milk in it with the empty heated pan, this will raise the cream in less time and in a larger quantity than if put into cold pans—try it." Some persons never wash their butter, but absorb the



buttermilk in the following way. They place a lump of butter in a coarse linen cloth, and beat against the sides of the churn, wringing the cloth from time to time in cold salt and water, repeating the beating process until the milky particles are entirely removed. The famous Epping butter is thus treated; this butter has the character in London of being the finest in England, very little salt is used for seasoning it; but, as the sale of it is so rapid, probably the keeping properties have hardly been tested.

The following recipe was given me by a farmer's wife who made excellent butter. To 32 lbs. of well-washed butter she allowed 3 oz. of the following mixture; 2½ lbs. of salt rolled fine, 6 oz. salt-petre, ½ lb. loaf sugar rolled fine; these ingredients to be well rubbed in a mortar, or rolled till they are thoroughly mixed. The butter after having been well worked to be put down in stone jars, over the top a strong bline to be poured and the jar kept well covered. Butter thus prepared should stand untouched for a month, and it will keep for a twelvemonth.

The thorough extracting of the milky particles and the working the salt well through the mass, cannot be too much insisted upon. Attention to cleanliness, coolness in summer, and a moderate temperature in winter, are the three most important matters for ensuring good marketable butter.

Oakland, Rice Lake, 1853.

#### TARES OR VETCHES.

For soiling purposes, in suitable climate and soil, the tare or vetch is superior to any other plant. Loudon says:—"Tares, if cut green, draw no nourishment from the soil whatever; while made into hay they afford a fodder preferred by cattle to pea straw, and more nutritious than hay or any other herbage." The heavy land farmers of Great Britain cultivate the vetch for soiling purposes, to an extent hardly credible in this country. It is a legume, belonging to the same botanical order as beans, peas and clover: and like them exhausts the soil so little of those elements most needed to grow large crops of wheat, as to give rise to the opinion of THAYER that it "draws no nourishment from the soil." Though this is, of course, not strictly true, yet it is certain that, like peas and clover, it is the best crop to grow as a preparation for wheat.

They do best on a rich, well-tilled, loamy soil. Three bushels of seed per acre, sown broadcast, early in the spring, is what we should recommend. White lupins are also leguminous, and closely resemble in many points the vetch. They are grown extensively in Italy for soiling purposes, and also for plowing in as a green manure. We think it is probable they may succeed better in this climate than the vetch, and be equally valuable.—*Rural New Yorker*.

#### MAPLE SUGAR.

In 1850, there was made in the United States, thirty-four and a quarter millions of pounds of maple sugar. This was about one-seventh as much as there was made of cane sugar,—so that

cane sugar is seven times as plenty as maple sugar, but maple sugar we think is seven times better.

Of this 34¼ million pounds, Maine made but 93,542 pounds. New Hampshire made more than a million and a quarter. Vermont more than six millions of pounds. Massachusetts more than seven hundred and ninety five thousand pounds. Connecticut more than fifty thousand, and New York more than ten million pounds.—*Maine Farmer*.

[The quantity of maple sugar made in both the Canadas in 1851, was 9,772,199 lbs., worth at 4d. per lb., £162,870. Of the whole quantity, Lower Canada made nearly two-thirds.]

#### USEFUL TO FARMERS.

Weights of various articles of produce, and the rates by which they should be bought and sold:—

A bushel of wheat, sixty pounds.  
Of shelled corn, fifty-six pounds.  
Of corn in the cob, seventy pounds.  
Of rye, fifty-six pounds.  
Of oats, thirty-four pounds.  
Of barley, forty-eight pounds.  
Of potatoes, sixty pounds.  
Of beans and peas, sixty pounds.  
Of bran, twenty pounds.  
Of clover seed, sixty pounds.  
Of Timothy seed, forty-eight pounds.  
Of flax seed, forty-six pounds.  
Of hemp seed, forty-four pounds.  
Of buckwheat, fifty pounds.  
Of blue grass seed, fourteen pounds.  
Of onions, fifty seven pounds.  
Of castor beans, forty pounds.  
Of dried peaches, thirty-three pounds.  
Of dried apples, twenty four pounds.  
Of salt, fifty six pounds.

THE COUNTRY NORTH OF US.—We have been favoured, by an intelligent friend, with some notes of a journey he has lately made through the tract commonly called the *Queen's Bush*, the Townships ranging to the north of us, and the country stretching towards the Saugeen. He tells us the settlements are extending rapidly in every direction. The road between Durham and Kincardine, a distance of 57 or 58 miles has been settled mostly on grants from government of 50 acres each, and that in the Township of Carrick almost every lot is "squatted" upon, although not yet in the market, in order that the occupiers may secure the pre-emption of purchase. Even the Township of Brant, still further to the north, is rapidly filling up—on the line of the Durham road and for two concessions back almost fully occupied. A new road is now being cut out from Elora direct to the Saugeen, which will doubtless soon open up additional country. Our informant says there is a magnificent extent of hard-wood land, stretching towards the Saugeen, of which he has never seen the equal unless it be in some portions of this Country.—*British American, Woodstock*.

## Horticulture.

### CULTURE OF FARM ORCHARDS.

A late number of the *Woodstock British American* has some useful practical remarks on the planting and culture of orchards. As the subject is one deserving of every consideration at this season of the year, we make no apology for giving a portion of the article:—

The site or aspect of an orchard is a most important as well as primary consideration, and it should be any other than towards the east. A western or north-western aspect is the most preferable; and if the ground falls a little in that direction, all the better. Fruit trees, by facing the bleaker aspect, are of course not drawn forward so much in the spring—the sap is kept down, the blossoms are retarded and checked in forming, (the most critical time for young fruit,) and thus escape more frequently the action of the late spring frosts. But another and very important object is gained by avoiding for the orchard a look to the east; the trees escape exposure to the early morning sun, as it is the sudden action of the sun upon the plant or blossom, while reflected possibly by a night frost, that does the mischief. It should be borne in mind that it is not the severity of our winters that destroys our fruit, for even that more delicate and delicious fruit tree, the peach, will stand our northern winters and thrive well in an exposed situation, whereas if planted in a warm southern aspect, it is a chance if we get any fruit, and the tree itself is often frost killed down to the ground.

The next thing to be considered is the soil for an orchard. In the first place, a wet sub-soil should be guarded against, as no fruit tree will thrive with water standing about its roots. Most trees thrive best on a gravel-sub-soil. A summer fallow is the best preparation for an orchard. It should be ridged, or turned with a sub-soil plough to the depth of eighteen inches if the soil will admit of it, and made moderately rich by manure. The trees (apple or pear) should be planted at least thirty feet apart. In digging the holes for them, if the ground has been thus prepared, no further care is needed than to remove any hard or unsuitable substance, and to replace it with good surface soil; but when the intended orchard has not been worked over, as we recommend, the holes for the trees should be dug from six to eight feet in diameter, and from fifteen to eighteen inches deep; the soil at the bottom being well loosened with the spade and dressed with good loose mould. Every tree should be staked, to secure it from the wind, by the action of which its hold in the ground is loosened, and the young fibres disturbed as they are thrown out from the root.

In setting the young tree in the ground, care should be taken to pare or cut off with a sharp knife the bruised or ragged extremities of the roots, and to dispose them and their young fibres in a free and natural position in the loose soil;

but the earth, as the holes are being filled, should never be trodden down near the stem of the tree as by so doing the roots are liable to be torn and injured, while the air and moisture become in a measure excluded. The tree should be lightly shaken as the mould is thrown in, to admit of its finding its way snugly about the root. When the hole is about half filled with earth, some water should be poured into it, which occasions the new soil to find its way naturally about the plant. After this is done to several trees they should be gone over again, and, the water having had time to filter through and the earth to settle, the holes may be rapidly filled up, and the earth at the top slightly pressed down as each is completed.

In planting out an orchard with apple or pear trees thirty feet apart, smaller and shorter-lived fruit trees may be planted midway between them—peach, plum, cherry, or dwarf pear,—this will fill up the rows one way, and will not hinder the use of the plough. Neither will the small trees interfere with the apple or pear trees until most of them will be found useless from age, when they can be grubbed up and dispensed with. A point yet to be considered is the cultivation, or cropping, of an orchard—for the better the ground is cultivated, the sooner will the trees afford remuneration for the labor bestowed upon them, and the finer will be the fruit. The writer has found by experience, that an orchard does best by being kept, for at least seven or eight years, under a hoed crop. By that time the trees ought to be in a good bearing state, and if the ground is rich and has been well cultivated, they will very likely show a disposition to grow too much to wood. To check this propensity, and again throw them back into fruit, the orchard may be seeded down for a couple of years, for which purpose clover will be found the best crop.

### THE FARMER'S GARDEN.

Mr. Barry remarks, in the February No. of the *Horticulturist*, that “no one can be truly said to live who has not a Garden.” The garden, well supplied with its proper edibles, fruits, salads, &c., is indeed a luxury that, although easy to be had, is beyond price. It is really strange that so many farmers will forego the enjoyment produced by one. That they, who have abundance of land and can select the best location for it, and have at hand the wherewith to make it rich in the elements of vegetables, should totally neglect it, is indeed a marvel. As a matter of economy, the garden should take the first position on the farmer's books. The choice of edibles which it affords not only go a good way in lengthening out the meat and flour barrels—but what is of more importance, they go much farther in contributing to the enjoyment and health of the family, giving a healthy tone to the secretions, and a consequent buoyancy to the spirits, that enable one to meet the labors of each day with a will, and shed a halo of happiness on all around. This living on pork and potatoes is not the best diet in the world, for



the human system, though it may do well in its proper proportion.

And how much better it is to have the fruit of one's own planting, tending and picking—set fresh and crisp on the table. The zest of its enjoyment is greatly heightened, while its real value is far more than of that selected at the market, or begged of a neighbor. It does not require a large space of ground for a good garden, but it should be rich, well drained, the soil made deep, and kept in perfect cultivation. Not a weed should mar its face. In such a spot, whatever you may plant—the reward will be great in the abundance and good quality of the fruit. Your lettuce, asparagus, cress, peas, beans, onions, salsify, tomatoes, beets, carrots, parsnips, &c., &c., will come to their full perfection, and be relished above all that you can conceive from the same things raised in a half starved, half tended soil. And then the borders will yield you such a treat of the small fruits, that you will ever after vote your garden not only a luxury, but an indispensable necessity.

Another idea about it is, if you take the proper care of your garden, you will be pretty sure to have order and neatness introduced into all the affairs of your farm, and so find that your profits are marvelously increased. Order, which is only promptness and perseverance in their best form, is the key that opens the door to success.—*Rural New Yorker*.

#### STRAWBERRIES SIX MONTHS IN THE YEAR.

A late number of the New York *Tribune* has the following description of a new kind of Strawberries. The matter is of great interest to farmers, and indeed to every other class of the community.

"We have several specimens of this fruit lying upon our desk as we write, which were plucked from vines grown in the open air and fruit ripened without the aid of a hot house. The plants from which we plucked these berries were grown upon the plantation of George A Peabody, about five miles from Columbus, Ga., and sent to this city some weeks ago, where they have been blooming and ripening ever since. Mr. Peabody has five or six acres covered with strawberry plants—plants, not vines, for they have no runner—from which he gathers fruit and sends to market regularly every day for an average period of six months in the year; making them, by his peculiar mode of cultivation, produce abundantly through the long hot summers, and sparsely through three or four other months. The variety cultivated is the Hovey seedling, impregnated with the early scarlet, and so changed in their character that they manifest no more disposition to throw out runners than the wild vines of the old pastures in their uncultivated state. Mr. Peabody endeavors to conform his cultivation as closely to nature as possible. He sets the plants in rows two feet apart, with a row of impregnators every sixth row, and in the fall spreads a slight coat of woods mould and covers the ground completely with leaves, but never afterwards digs up the surface or applies any other manure. Grass and weed are cut up with

a hoe, and runners which only occasionally appear are cut away, unless the old plant is failing, and then that is cut up and a new one started. Every day during the summer the vines are copiously watered by the assistance of a garden engine. This is the principal cause of success; of continued production and reproduction of fruit through such a long season.

We have seen upon these beds a growth of fruit ten times greater by weight or measure than all the vines and leaves producing it, and at the same time upon the same soil a few rods off, a growth of vines which would have afforded a good swath to the mower, upon which there was not a single berry. This bed was highly manured and bore vines. The other bed was highly watered, and bore fruit. Dr. Hull, of Newburgh, has mulched his beds with spent tan bark, instead of leaves, and found it eminently beneficial, increasing the productiveness, richness of flavor, and length of time of bearing. The question which naturally suggests itself to the minds of all is this: Can we lengthen the bearing season of the strawberry plant in this climate by pursuing the same course which has proved so wonderfully successful with Mr. Peabody?

#### DISTANCE APART TO PLANT TREES.

The *Agriculturist*, U. S., says:—After a long course of observation and experience on this subject, we have fully made up our minds to the conclusion that in *any* part of the United States and the Canadas, the following distances are the *least* at which trees should be required to stand:

Apples, 33 feet, or two rods—40 feet is none too far.

Pears, on their own stocks, 24 to 30 feet.

Pears, on quince stock, 10 to 12 feet.

Quinces, peaches, nectarines, apricots and plums, 16 to 20 feet.

English cherries, 20 to 24 feet.

Kentish, or common red, or pie cherry, 16 to 20 feet.

#### KEEPING SCIONS.

The only secret is to keep them cool and damp; not wet. The best course I have ever tried is to lay them on a brick floor in a cool cellar, and covered with thick, damp sacking—if the sacking becomes dry, sprinkle it. In this manner they are kept in perfect order from March until June, and easily taken as wanted. Many plans are recommended, some troublesome, and others unsafe. I once had more than 5,000 packed in damp pine saw-dust in a warm cellar, and though apparently in perfect order, they became worthless.

#### TRANSPORTATION OF SCIONS.

When ordered in large quantities, and by express, the winter is the best time—but if sent in the spring, they can easily be sent 1,000 miles or more, by being packed in damp moss, which is well understood by those who sell scions, so that any one wanting can order with the assurance of receiving them in perfect condition.

## Natural History.

### THE OX.—HISTORY, MANAGEMENT, &c.

#### THE MIDDLE HORNS.

##### WEST HIGHLANDERS IN ARGYLESHIRE.

The county of Argyle stretches along the western coast of Scotland for 115 miles, but its average breadth is little more than 30 miles. The southern part is low, and comparatively level, and the temperature mild. The northern is rugged and mountainous, and the climate cold and ungenial, and there is much barren land, and little good pasture; but in Cantire, at the south, there is plenty of excellent feed; therefore the cattle differ materially in northern and southern parts. Among the mountains, the Highland breed is found almost unmixed; in the level country, there is the same variety and mixture of breed which is observed in other dairy districts.

In North Argyle the West Highlanders are larger than the Hebrideans, and are now bred to the full size which the soil, or the best qualities of the animal will bear. That fundamental principle of breeding is generally adopted here, that the size must be determined by the soil and the food; and that it is far more profitable to the farmer to have the size of his breed under, than over, the produce of his land. Both will gradually adapt themselves to the soil; but the small beasts will become more bulky, and improve in all his points—the large one will degenerate in form and in every good quality. Therefore, the soil and management of Argyle being, generally speaking, better than that of the Hebrides, it was found that a somewhat larger animal might be admitted; he was, however, procured, not by crossing with a breed of superior size, but by

careful selection from the best of the pure breed. Experience and judgment soon discovered when the proper point—the profitable weight—was gained; and then the farmer went back to the equally pure, but smaller breed of Skye, lest the form should be deteriorated, and the fattening should not be so equable and true, and the meat should lose some of its beautiful character and flavor.

There is no part of the Highlands where the soil and the climate are better adapted to the perfection of the breed than in Argyle, or where we oftener see the true characteristics of the best Highland cattle—short and somewhat strong in the shank, round in the body, straight in the back, well-haired, long in the muzzle, and with a well turned and rather small horn. There is no district in which the farmer so superstitiously, and yet properly, refrains from foreign admixture. Could the two great errors of the Highland farmer be remedied, namely, overstocking in summer and starving in winter—there would be nothing more to desire for the grazier, except, perhaps, docility of temper; and that will be acquired when improvements in agriculture have rendered it unnecessary for the beast to wander so far over so wild a country, in search of food, and when he will be earlier and more properly domesticated. The Highlander, however, must be reared for the grazier alone. Every attention to increase his weight, in order to make him capable of agricultural labour—every effort to qualify him for the dairy, will not only lessen his hardiness of constitution and propensity to fatten, but will fail in rendering him valuable, for the purposes at which the farmer foolishly aims. The character of the Highlander must still be that he will pay better for his quantity of food than any other breed, and will fatten where any other breed would only live. This is the secret of profitably breeding or grazing Highland cattle.



THE WEST HIGHLAND FAT OX.

The management of both the cow and the calf depend much on the object which the breeder principally pursues. If he studies the character

of his stock, he makes little butter and cheese, and generally rears a calf for every cow, giving it the greater part of her milk. A likely bull-



calf is sometimes allowed the milk of two cows for a considerable time, and often for six months. When the calves are weaned, they are fed on the hills during the summer, and brought on the the lower grounds in winter; and, if the pasture is not good, they are occasionally fed with straw and hay. It is after the first winter that the absurd and cruel system of overstocking and starvation commences. From the superiority of the soil, this is not carried to the ruinous extent here that it is in the Hebrides. In favorable situations, some farmers winter their calves in open sheds, where they are fed with hay in the racks. This makes them hardier, and does not cripple their growth.

The Argyleshire farmer is sometimes wrong in breeding from a favorite cow too long. Although the Highlanders fatten rapidly for a certain time, and begin early to fatten where the pasturage will give opportunity, they do not thrive so well when old. A cow ultimately destined for the drover, should not be permitted to breed after six years old. She may make fair meat for home consumption, but she will not fatten so quickly or so truly, on all her points; and the drover will seldom purchase her except at a very inferior price.

It is now also established as a principle, that the same bull should not be used too long. The hardness of the cattle has been thought to be materially affected by it. The bulls are generally disposed of at six years old, when they are in full vigor, and valuable for some distant herd.

The Ayrshire cow has, however, nearly superseded the native breed through the whole of Argyleshire for the purposes of the dairy. She is promising to spread as rapidly and as widely through the middle and northern parts of Scotland as the Short-Horn has done along the whole of the eastern part of England. The West Highland cattle are universally adopted for grazing farms, and the Ayrshire nearly as generally for the dairy. Some Galloways are found in Argyle and particularly in the southern part of the county: but they are not equal to the native Highlanders.

#### THE SHETLAND ISLANDS.

The Shetland Islands present a wonderful scene of rugged, black, and barren rocks. No tree or shrub relieves these dreary scenes, and only gray rocks appear rising from the marshes and pools, and shores, bounded by the wildest precipices. There are few or no artificial grasses or green crops, or enclosures protecting these crops, and grasses could not be brought to perfection in these islands; there is nothing but moss, heath, and, sea-weed; yet there is a breed of horses, diminutive, but beautiful, hardy, and strong; and the cattle are of the same origin with the West Highlanders. They have been diminished in size by the coldness of the climate and the scarcity of food; but they have not been so seriously injured by the folly of men—they have not been domesticated to be starved outright. They are small, gaunt, ill-shaped, so far indeed, as their shape can be ascertained through the long, thick hair with which they are covered, and which forms an impenetrable defence against the snow and the sleet. They are rarely more than four feet high at the withers, and sometimes scarcely more than thirty-five or forty pounds a quarter.

The Shetland cattle contrive to live on their native moors and wastes, and some of them fatten there; for a considerable and increasing quantity of beef is salted in Shetland and sent to the mainland, the quality of which is exceedingly good. When, however, the Shetlanders are transported to the comparatively rich pastures of the north of Scotland, they thrive with almost incredible rapidity, and their flesh and fat, being so newly and quickly laid on, is said to be peculiarly delicious and tender. They run to fifteen or sixteen, or even twenty stones in weight. If they are carried still farther south they rarely thrive; they become sickly and even poor, in the midst of abundance: the change is too great, and the constitution cannot be habituated to it.



ABERDEENSHIRE OX.

ABERDEENSHIRE.

This extensive county breeds or grazes more cattle than any other of Scotland. The cattle in Aberdeenshire have been calculated at 110,000. More than 20,000 are slaughtered, or sold to the graziers every year.

The character of the cattle varies with that of the country. In the interior and on the hills, formerly occupying the whole of that district, and still existing in considerable numbers, is the native unmixed Highland breed. This breed, however, would be out of its place in the milder climate and more productive soil of the lower district of Aberdeen; another kind of cattle was therefore gradually raised, the origin of which it would be difficult to describe.

It was first attempted by judicious selections from the native breed, and some increase of size was obtained, but not sufficient for the pasture. The long-horn and the short-horn were tried; but either they did not amalgamate with the native breed, or a species of cattle were produced too large for the soil. There were exceptions to this, and one of them, the Kintore ox, was bred by Lord Kintore from an Aberdeenshire cow and a short horn bull.

This animal is a sufficient proof of what may be effected by the cross. The introduction of steam will probably tempt many of the northern breeders to try the first cross.

To improve the Aberdeen cattle, all the southern counties of Scotland were resorted to, but with doubtful success. The Fife, or Falkland breed, possessed enough of the old cattle to bid fair to mingle and be identified with the natives, while the bones were smaller, the limbs cleaner, and yet short; the carcass fairly round, and the hips wide, and they were superior in size, hardy, and docile, and excellent at work, and good milkers. These were desirable qualities, and particularly for mingling with the Highland breed. Accordingly, bulls from Fife were introduced into Aberdeen, and the progeny so answered as to be generally adopted, and become the foundation of what is now regarded as the Aberdeenshire native breed.

The horns do not taper so finely, nor stand so much upward as in the West Highlanders, and they are also whiter; the hair is shorter and thinner; the ribs cannot be said to be flat; but the chest is deeper in proportion to the circumference; and the buttock and thighs are likewise thinner. The color is usually black, but sometimes brindled; they are heavier in carcass; they give a larger quantity of milk; but they do not attain maturity so early as the West Highlanders, nor is their flesh quite so beautifully marbled; yet at a proper age, they fatten as readily as the others, not only on good pasture, but on that which is somewhat inferior.

AYRSHIRE BREED.

This county extends along the eastern coast of the Firth of Clyde, and the North Channel from Renfrew to Wigtownshire, by the former of which it is bordered on the north, and by the latter on the south, while it has Kircudbright, Dumfries and Lanark on the east. The climate

is moist but mild; and the soil with its produce is calculated to render it the finest dairy county in Scotland, and equal, perhaps, to any in Great Britain. There is a great deal of permanent pasture on the sides and the tops of the hills; but the greater part of the arable land is pasture and crop alternately. The pasture-ground is occupied by the beautiful dairy stock, a very small portion of it being reserved for the fattening of cows too old to milk.

Ayrshire is divided into three districts:—south of the river Doon is the Bailiary of *Carrick*—between the Doon and the Irvine is the Bailiary of *Kyle*, and north of the Irvine is *Cunningham*. This last division lays principal claim to be the native country of the Ayrshire cattle, and, indeed, they once went by the name of the Cunningham cattle.

Mr. Aiton, in his "Treatise on the Dairy Breed of Cows" thus describes the Ayrshire cattle:—"The shapes most approved of, are—head small, but rather long and narrow at the muzzle; the eye small, but smart and lively; the horns small, clear, crooked, and their roots at considerable distance from each other; neck long and slender, tapering toward the head, with no loose skin below; shoulders thin; fore-quarters light; hind-quarters large; back straight, broad behind, the joints loose and open; carcass deep, and pelvis capacious, and wide over the hips, with round fleshy buttocks; tail long and small; legs small and short, with firm joints; udder capacious, broad and square, stretching forward, and neither fleshy, low hung, nor loose; the milk veins large and prominent; teats short, all pointing outward, and at considerable distance from each other; skin thin and loose; hair soft and woolly. The head, bones, horns, and all parts of least value, small; and the general figure compact and well proportioned." Mr. Rankine very properly remarks, that, "compared with other improved breeds, the thighs, or what is called the twist of the Ayrshire cow, are thin. She is, characteristically, not a fleshy animal."

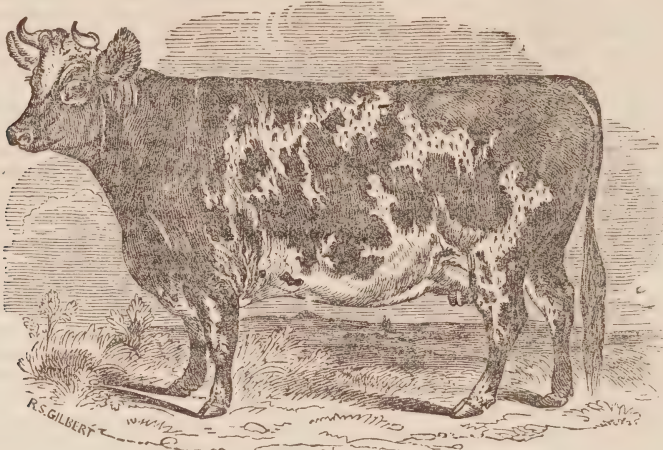
The Ayrshire farmers prefer their dairy-bulls, according to the feminine aspect of their heads and necks; and wish them not round behind but broad at the hook-bones and hips, and full in the flanks. Experience, dearly bought, led to this, for the consequence of the crossing of the small native breed with the heavy cattle imported from the south, was a bony ill-shaped animal, not much improved as a milk-er, and its disposition to fat lamentably decreased; it may, however, demand consideration whether the round and compact form of the West Highlander and the Galloway have not been too much sacrificed, and even the defects of the short-horn needlessly perpetuated.

Mr. Aiton says:—"The qualities of a cow are of great importance. Tameness and docility of temper greatly enhance the value of a cow. Some degree of hardiness, a sound constitution, and a moderate degree of life and spirits, are qualities to be wished for in a dairy cow, and what those of Ayrshire generally possess. The most valuable quality which a dairy cow can possess, is that she yields much milk, and that



of an oily, or butyraceous, or caseous nature, and that after she has yielded very large quantities of milk for several years, she shall be as valuable for beef as any other breed of cows known; her fat shall be much mixed through the whole

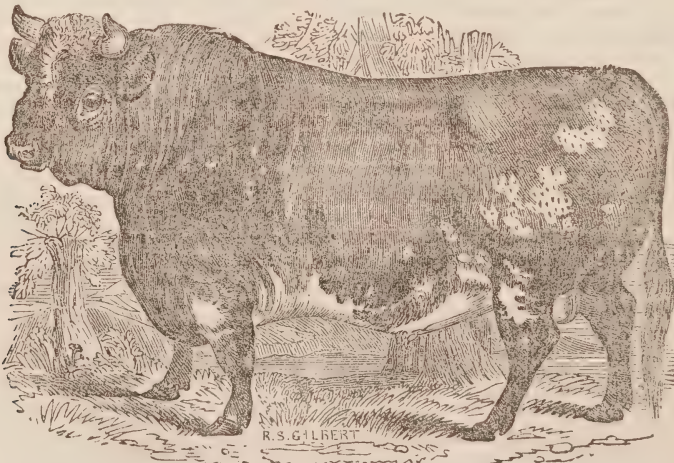
flesh, and she shall fatten faster than any other." This is high praise, if it can be truly affirmed of the Ayrshire cattle; we are naturally anxious to know the origin, the history, and general management of this valuable animal.



AYRSHIRE COW.

The origin of the Ayrshire cow is even at the present day a matter of dispute; all that is certainly known is, that a century ago there was no such breed in Cunningham, or Ayrshire, or Scotland. Did the Ayrshire cattle arise entirely from a careful selection of the best of the native breed?—if they did, it is a circumstance unparalleled in the history of agriculture. The native breed may be ameliorated by a careful selection;

its value may be incalculably increased—some good qualities—some of its best qualities—may be for the first time developed; but yet there will be some resemblance to the original stock, and yet the more we examine the animal, the more clearly we can trace out the characteristic points of the ancestor, although every one of them improved.



THE AYRSHIRE BULL.

Mr. Aiton gives the following description of the Ayrshire cattle seventy years ago: "The cows kept in the districts of Kyle and Cunningham were of a diminutive size, ill-fed, ill-shaped, and they yielded but a scanty return in milk; they were mostly of a black color, with large stripes of white along the chine or ridge of their backs, upon their flanks, and on their faces.—Their horns were high and crooked, having deep

ringlets at the root, the plainest proof that the cattle were but scantily fed; the chine of their backs stood up high and narrow; their sides were lank, short and thin; their hides thick and adhering to the bones; their pile was coarse and open; and few of them yielded more than six or eight quarts of milk per day, when in their best plight; or weighed, when fat, more than twelve or sixteen to twenty stones avoirdupois, sinking

offal." It was impossible that these cattle, fed as they then were, could be of great weight, well shaped, or yield much milk. Their only food in winter and spring was oat-straw, and what they could pick up in the fields, to which they were turned out almost every day, with a mash of a little corn with chaff daily for a few weeks after calving, and their pasture in summer was of the very worst quality; and that coarse pasture was so overstocked, and eaten so bare, that the cattle were half-starved.

If Mr. Aiton's description of the present improved Ayrshire is correct, the breed is very much changed, and yet there is so much indistinct resemblance, that a great deal of it must have been done by careful selection, from among the native cattle, and better feeding and treatment; but when we look closer into the matter, the shortness, or rather diminutiveness of the horns, their width of base, and awkward setting on; the peculiar tapering towards the muzzle; the narrowing at the girth; the bellying; and the prominences of all the bones—these are features which it is impossible for any selection from the native breed to give. While the judge of cattle will trace the features of the old breed, he will suspect, what general tradition confirms, that it was a fortunate cross, or a succession of crosses with some foreign stock, and that, probably it was the Teeswater short-horn that helped to produce the improved Cunningham cattle.

In many other districts of Scotland the attempt to introduce the Teeswater breed, or to establish a cross from it, had palpably failed, for the soil and climate suited only the hardihood of the Highlander; but here in Ayrshire was a mild climate—a dairy county; the Highlander was in a manner out of his place; he had degenerated, and the milking properties of the Teeswater, and her capability of ultimately fattening well, amalgamated with his hardihood and disposition to fatten, and there resulted a breed, bearing the stamp of its progenitors, and, to a very considerable degree, the good qualities of both.

Who introduced the present breed is not very precisely ascertained; but the late Colonel Fullarton, in his account of the "Husbandry of Ayrshire," which was published in 1793, and whose authority is of considerable weight in everything relating to it, states that a gentleman of long experience, Mr. Bruce Campbell, asserts that this breed was introduced by the late Earl of Marchmont. The introduction, then, of this dairy stock must have happened between 1724 to 1740, and so far corresponds with the traditionary account. From what particular part of the country they came there appears no evidence. The conjecture is, that they are either of the Teeswater breed, or derived from it; judging from the varied color or from somewhat better evidence, the small head and slender neck, in which they bear a striking resemblance to them. Some breeders, however, have maintained that they were produced from the native cow, crossed by the Alderney bull. It requires but one moment's inspection of the animals, to convince us that this supposition is altogether erroneous.

These cattle, from which, by crosses with the

native breed, the present improved Ayrshire arose, were first introduced on Lord Marchmont's estates in Berwickshire, and Sornbergh in Kyle. A bull of the new stock was sold to Mr. Hamilton of Sundrum; then Mr. Dunlop in Cunningham imported some of the short-horns, and their progeny was long afterwards distinguished by the name of the Dunlop cows. These were the first of the improved breed that reached the bailliery of Cunningham. Mr. Orr, about the year 1767, brought to Kilmarnock some fine milch cows, of a larger size than any which had been seen there. It was not, however, till about 1780, that this improved breed might be said to be duly estimated, or generally established in that part of Ayrshire; about 1790, Mr. Fulton from Blith carried them into Carrick, and Mr. Wilson of Kilpatrick first took them to the southern parts of that district. So late as 1804 they were introduced on the estate of Penmore, and they are now the established cattle of Ayrshire; they are increasing in the neighboring counties, and have found their way to most parts of Britain.

The breed has improved since Mr. Aiton described it, and is short in the leg, the neck a little thicker at the shoulder, but finely shaped toward the head; the horns smaller than those of the Highlander, but clear and smooth, pointing forward, turning upward, and tapering to a point. They are deep in the carcass, but not round and ample, and especially not so in the loins and haunches. Some, however, have suspected, and not without reason, that an attention to the shape and beauty, and an attempt to produce fat and sleeky cattle, which may be admired at the show, has a tendency to improve what is only their quality as grazing cattle—and at the certainty of diminishing their value as milkers.

The excellency of a dairy cow is estimated by the quantity and quality of her milk. The quantity yielded by the Ayrshire cow is, considering her size, very great. Five gallons daily, for two or three months after calving, may be considered as not more than an average quantity. Three gallons daily will be given for the next three months, and one gallon and a half during the succeeding four months. This would amount to more than 850 gallons; but allowing for some unproductive cows, 600 gallons per year may be the average quantity annually from each cow.

The disposal of the milk varies according to the situation of the farm, and character of the neighborhood. If it is sold as new milk, the produce of the cow will be £20 per annum.—Others at a distance from any considerable town, convert it into butter or cheese.

The quality of the milk is estimated by the quantity of butter or cheese that it will yield.—Three gallons and a half of this milk will yield about a pound and a half of butter. An Ayrshire cow, therefore, may be reckoned to yield 257 pounds of butter per annum.

When the calculation is formed, according to the quantity of cheese that is usually produced, the following will be the result:—twenty-eight gallons of milk, with the cream, will yield 24



pounds of sweet milk cheese, or 514 pounds per annum.

This is certainly a very extraordinary quantity of butter and cheese, and fully establishes the reputation of the Ayrshire cow, so far as the dairy is concerned.\*

The Ayrshire cattle are not yet sufficiently known, and cannot be procured cheap enough, or in adequate numbers, to undergo a fair trial in the south. Some have been tried in the London dairies. As mere milkers they could not compete with the long established metropolitan dairy cow, the short-horn. They yielded as much milk in proportion to size and food, but not in proportion to the room occupied, and the increased trouble which they gave from being more numerous, in order to supply the requisite quantity of milk. They produced an unusual quantity of rich cream; but there was so much difficulty in procuring them to keep up the stock and the price asked so great, that they were comparatively abandoned.

The fattening properties of the Ayrshire cattle we believe to be exaggerated. They will feed kindly and profitably, and their meat will be good. They will fatten on farms and in districts where others could not, except supported by artificial food. They unite, perhaps, to a greater degree than any other breed, the supposed incompatible qualities of yielding a great deal of milk and beef. It is, however, on the inferior soil and the moist climate of Ayrshire, and the west of Scotland, that their superiority as milkers is most remarkable. On their natural food of poor quality they give milk abundantly and long, and often until within a few days of calving; but when they are moved to a richer pasture, their constitution changes, and they convert their food more into beef. In their own country a cow of a fleshy make, and which seldom proves a good milker, may be easily raised to 40 or 50 stones, and bullocks of three years old are brought to weigh from 50 to 60 stones. There is a lurking tendency to fatten about them which good pasture will bring forth; so that when the Ayrshire cow is sent to England she loses her superiority as a milker, and begins to accumulate flesh. On this account it is that the English dealers who purchase the Ayrshire cows generally select the coarsest animals, to avoid the consequence of the change of climate and food. It is useless to exaggerate the qualities of any cattle, and it cannot be denied that even in this tendency to fatten when their milk begins to fail, or which often causes it to fail, the Ayrshires must yield to their forefathers the Highlanders, and to their neighbors the Galloways, when put on a poor soil; and they will be left considerably behind their short-horn sires when transplanted to luxuriant pasture. It will be long, perhaps, before they will be favorites with the butchers,

for the fifth quarter will not usually weigh well in them. Their fat is mingled with the flesh rather than separated in the form of tallow; yet this would give a more beautiful appearance to the meat, and should enhance its price to the consumer.

Two circumstances, however, may partially account for their not being thought to succeed so well when grazed: they are not able to travel so far on the same keeping as the Highland cattle; and, from their great value as milkers, they are often kept till they are too old to fatten to advantage, or for their beef to be of the best quality.

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## Editorial, &c.

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G. BUCKLAND, Esq., EDITOR.

H. THOMSON, Esq., ASSISTANT EDITOR.

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### HINTS FOR THE MONTH.

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This season has been hitherto somewhat unusually cold and backward, and it is probable that a greater portion of the spring sowing than usual, which should be performed in April, will have to be completed in May. Some valuable remarks will be found in reference to spring sowing, change of seed, cultivation of the garden, orchard planting, the use of artificial manures for root crops, &c., in other parts of this number.

After the farmer has got in, in good order, those crops which occupy the larger extent of the farmer, viz., spring wheat, barley, oats, peas, &c., he must turn his attention to the proper preparation of the ground for, and sowing those, which require a somewhat more careful and thorough cultivation, such as potatoes, Indian corn, turnips, mangels, &c.

The ordinary cultivation of the potato crop is so well understood that it can scarcely be necessary to enter into detail upon that point; but, judging from the census of 1852, which makes the average crop for 1851 only about sixty-six bushels per acre, the cultivation actually prevalent, if the return be at all near the truth, must be slovenly and defective in the extreme, or there must be some other great impediment to the obtaining of good crops of this plant. Former experience has shown that our soil and climate are both well adapted to the growth of the potato, so that the fault must lie between defective

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In some experiments conducted at the Earl of Chesterfield's dairy at Bradley-Hall farm, it appeared that in the height of the season, the Holderness would yield seven gallons and a quart; the long horn and Alderney, 4 gallons 3 quarts; and the Devon, 4 gallons. 1 pint per day; and when this was made into butter, the result was, from the Holderness, 33½ ounces; from the Devon 28 ounces; and from the Alderney, 25 ounces: The Ayrshire yields 5 gallons per day, and from that is produced 34 ounces of butter.

cultivation and the potato disease. Against the latter evil, as yet unfortunately, no specific remedy has been found, although a good many nostrums have been prescribed. The disease is not now, however, so prevalent as a few years since. The best practical remedies will be found in the selection of good and sound seed, good fresh land, early planting, clean after culture, and taking up early in the fall. Although heavier crops have sometimes been obtained by planting somewhat late in the season, say during the first week in June, yet experience seems to show that as a precaution against the disease, early planting, that is, not later than the 15th or 20th of May, is to be recommended, and that a sounder, drier, and more wholesome root will thus be obtained. Land selected for potatoes should be dry, or at least such as will admit of good drainage. That newly broken up from sward is found to be favorable for the growth of a good crop; and very clean and fine potatoes have even been produced by ploughing up sod a few days before planting, harrowing the surface finely lengthwise of the furrow, and then putting in with the hoe two or three inches in depth.—Planting too deep is always to be avoided, in order that the roots may not be liable to submergence for several days together from heavy rains. If manure be used, it is better to spread it broadcast upon the surface and plough it under before making the drills, than to place it in the bottoms of the drills immediately under the seed, as is sometimes done. Lime and ashes, spread upon the surface, and ploughed under, have been applied successfully as preventives of the rot. The high price potatoes have recently sold at, will probably lead this year to an attempt at a more successful cultivation of this valuable root.

Indian corn is another crop which is not cultivated in Upper Canada to the extent, or with the success, that it should be. According to the census returns there were in 1851, 70,571 acres planted, which produced 1,696,513 bushels, or an average only of about 24 bushels per acre. Now every farmer who has cultivated this crop knows that in consideration of the more expensive cultivation and manuring required, he should obtain at least 40 or 50 bushels of shelled corn per acre to remunerate him for his trouble; so that

it would appear, unless the crop has grown almost spontaneously, that the above 70,000 acres have been cultivated on the whole at a positive loss, although there have been, no doubt, here and there very handsome crops obtained. In the neighboring State of New York, which is not better adapted to the growth of Indian corn, than Upper Canada, their agricultural societies' reports mention occasionally crops of 80, 100 or even more bushels per acre of shelled corn being produced—the crop being much more extensively cultivated than with us. But the average return there is also only about 25 bushels per acre, which tends to prove that if they cultivate a greater breadth, they do not do it in a much better manner, or their soil and climate cannot be much better adapted to the crop than in Canada.

We have here occasionally also, when an attempt is made at successful cultivation, crops of 60 or 70 bushels per acre, and the sample of the finest quality. The value of Indian corn, both of the stalk and of the grain, as a feeding crop, is well known, not to mention its wholesome and agreeable qualities as an article of family consumption; and when the depredations of the bug upon the pea, and the rot upon the potato, as well as occasional shortcomings in our hay crops are taken into account, there appears to be every inducement to pay more attention to the cultivation of a crop so well adapted to supply deficiencies. As an article of fodder, we should like to hear of some experiments being made in thick sowing of corn, with the view of cutting it green, and curing for hay. It can hardly be doubted that a large weight per acre, of very nutritious winter fodder could thus be produced. But the ordinary stalk, after a crop of corn has been obtained, is of considerable value, if properly taken care of, for this purpose. It must be confessed that the cultivation of Indian corn involves a good deal more of expense and trouble than some other crops, and the saving of it in the fall in a dry and sound state, is sometimes difficult, but the obtaining of a good crop is worth some extra trouble and outlay. It is well known that this crop requires the best quality of land, and that abundantly manured, and thoroughly cultivated. The ear-



lier ripening and medium-sized sorts are to be preferred, as more suitable to our seasons. The time for planting is when the warm genial weather of spring has arrived, as indicated by the blossoming of the apple trees, the opening of the leaves on the forest trees, &c. This will generally be from the 15th to the 25th of May, though good crops are sometimes obtained, planted as late as the first of June. A few scarecrows are required, joined with a little active watching, to keep off the depredations of the crows for the first week or two, and after that, attentive hoeing and cultivation to loosen the ground and keep down the weeds—and if a good return be not obtained, the ground will at least be left in splendid order for any other crop.

The cultivation of turnips, mangold wurtzel, carrots, cabbage, &c., has been so often brought before the readers of the *Agriculturist*, that we need not enter minutely upon the subject now, but every farmer will do well to cultivate what he can, in reason, of these crops, but to attempt no more than he can accomplish thoroughly.—The *modus operandi* is pretty well understood. A good, loose soil, liberal manuring, sound seed, and clean after-culture, are the principal items in the account. The fly is the principal enemy that the turnip has to contend against. Thick sowing and a vigorous growth at first, are the antidotes. In order to secure the latter, active manures, such as bone-dust and guano, are used with advantage. Swedish turnips may be sown from about the 20th May, till the 10th of June. It is sometimes found that they attain a more vigorous and early growth, and escape the fly better by being sown at the later period, but there is one advantage in early sowing, which is, that if the first experiment be not successful, it is not too late to make another. The cultivation of the mangold wurtzel is the same in all respects as that of the turnip, and the crop is equally or nearly as valuable for feeding purposes. It is moreover exempt from attacks of the fly, and if sound seed be obtained, may be counted upon as a tolerably sure crop. The seed should be soaked in warm water about 48 hours before planting, and then, for convenience of handling, may be dried in plaster. Carrots, parsnips, &c., require a deep friable soil, careful

hoeing as soon as they appear above ground, to prevent the weeds getting the advantage of them, and are, with proper cultivation, most useful and profitable crops.

All these little matters, together with attention to the garden, the orchard, the fallow, sheep sheering, and many other matters of farm economy, will occupy the farmer's time during the busy month of May, and he will do well if he can get them all done, and done well, before the work which more properly belongs to the next month, begins to press upon him.

#### TICKS IN SHEEP.

A correspondent sends us the following remedy for ticks in sheep, which he has successfully tried for a number of years.

"Give the sheep sulphur with their salt thrice a-week for a month before shearing;—say 2 lbs. for twenty or thirty sheep. Sulphur is very beneficial for sheep otherwise."

#### IMPORTANT SALE OF PURE BRED STOCK.

We have great satisfaction in calling the attention of our readers to Mr. Morris's advertisement of Sale of Short-Horn Cattle, on another page. Those who are desirous of obtaining animals of superior merit, derived from the best blood that England can produce, would consult their own interests by attending the sale. Mr. Morris's high standing, both as a breeder and an honorable dealer, is too well known to require any recommendation here.

#### STATUTE LABOR ON THE HIGHWAYS.

Section 29 of the Assessment Act imposes two days of statute labor on each person, not otherwise assessed in townships, with the following scale for those who otherwise appear in the assessment roll:

At not more than £50, be liable to 2 days' labor;	
More than £50, but not more than £100, 3 days	
" 100 .....	150 4 "
" 150 .....	200 5 "
" 200 .....	300 6 "
" 300 .....	400 7 "
" 400 .....	500 8 "
" 500 .....	600 9 "
" 600 .....	800 10 "
" 800 .....	1000 12 "
For every 200 above the sum of 1000	1 "

REPRESENTATION OF CANADA IN THE SYDENHAM CRYSTAL PALACE.

It will be seen from the subjoined Circular that the Government are disposed to render aid in collecting and transmitting specimens of the productions of Canadian soil, skill, and industry, provided that Agricultural Societies and individuals more immediately introduced, will render their active co-operation. The raw produce of the Colonies, we understand, will be arranged and exhibited in the Sydenham Crystal Palace free of charge,—but mechanics and manufacturers will be charged at a uniform rate, for the space that their articles may occupy. It is of great importance that the very best specimens of what the soil and industry of Canada can produce should be collected and sent as soon as possible, in order that we may occupy a yet higher position than we did in 1851. The Sydenham Exhibition will be in many respects different from its great predecessor, more extensive and systematic in its arrangements, and as it is intended to be permanent, it will continue to reflect the progress of the world's industry and discoveries. As the very creditable position occupied by Canada, in the World's Exhibition of 1851, has contributed in various ways to our present prosperous condition, by affording to the people at home ocular proof of the capabilities and state of industry and civilization of this important member of the British Empire, let us hope that no exertion or reasonable expense will be spared, in doing full justice to this Province on the approaching occasion.

CIRCULAR.

BOARD OF AGRICULTURE,

Toronto, April 8th, 1854.

SIR,—The Boards of Agriculture of Upper and Lower Canada respectively, having been in communication for some time past with the Bureau of Agriculture, on the desirableness of having the Raw Produce of Canada efficiently represented in the Sydenham Crystal Palace, near London, England, which will be opened this Spring; I have the satisfaction to inform you that the Board has now received official information that the Government are disposed to aid this object by a pecuniary grant, provided the Agricultural Societies in the Province are prepared to give their active co-operation.

I will thank you to inform me immediately, or as early as possible, of the determination of your County and Branch Societies on this subject, and I have to request that in the case of a favorable decision, and that you can procure in your County articles of the necessary superior quality, that you will do so, and forward them to the Office of the Board of Agriculture, Toronto, addressed to George Buckland, Esq., with as little delay as possible.

I would suggest, with the view of securing a well selected assortment of specimens, that all articles should be collected from your County, and forwarded here, under the supervision of the President and Officers of your County Society.

The value of the articles and the expense of forwarding them to the City of Toronto, and finally to England, will be paid by the Board, aided by Government for that purpose.

Specimens of Raw Produce are required of the following descriptions, and in the quantities, or of the bulk named:—

GRAIN:

Wheat, Barley, Oats, Peas, Indian Corn, (in the cob,) Buckwheat, Rye, &c., of the different varieties, five pecks of each, of the best quality that can be obtained, and each carefully named,—also with the name of the producer and the Township where grown.

SEEDS:

Flax, Hemp, Turnip, Canary, Millet, Clover, Timothy, &c., one peck of each.

PRODUCE

*Used in the Manufacture of Textile Fabrics, &c.*

Flax and Hemp, five lbs. of the raw plant of each; and five lbs. of the hackled fibre. Wool, two lbs. of the best specimens of the fine, medium and long sorts, carefully chosen and put up.

WOODS:

Superior specimens of the rarer kinds of Wood are desired; in the form of transverse sections of the tree, with the bark on, the specimens to be about two feet in length, and of the entire girth of the tree. Longitudinal sections in the form of rough planks about four feet in length, and three inches thick, of the entire width of the tree, will also be acceptable. It is highly desirable that all our native woods should be represented in the Sydenham Exhibition, but the Board do not desire anything of this sort unless it be a very superior specimen.

NEW INVENTIONS, ETC:

The Board will be happy to communicate with Parties possessing New and Useful Inventions, or with Manufacturers of such articles as indicate our industrial state and progress, with a view of determining the expediency of transmitting such productions to the Sydenham Exhibition.

I have the honor to be,

Sir,

Your obedient Servant,

E. W. THOMSON.

*President,*

*Board of Agriculture of Upper Canada.*



# THE RELATIONS OF GEOLOGY TO AGRICULTURE IN NORTH-EASTERN AMERICA.

Two very interesting and instructive papers on the above subject have recently appeared in *The Journal of the Royal Agricultural Society of England*, by Professor Johnston.—One treats of the relations of Geological structure to Agricultural Capability, in the British Province of New Brunswick. The other relates to the same principle of illustration, in reference to the extensive country lying between the Atlantic sea-board, and the first slopes of the Alleghany Mountains;—comprising large portions of Virginia, the Carolinas, Georgia and Alabama. It is to the latter portion of the article, however, with reference to the Geological Structure and Agricultural Capability of *Western New York*, that we wish to call more particularly the attention of our readers.

The country referred to extends along the southern shore of Lake Ontario, from about Buffalo to Oswego, being in length near 200 miles, and its mean breadth about 30 miles.—The names of the rock formations of this belt of country, and the character of the soils derived therefrom, we will endeavor to give in as few words as possible.

1. *The Medina Sandstone* extends at unequal distances along the shore of the Lake, and consists of brownish or red sandstone intermixed with reddish shaly clay, forming a low flat belt of country, the soil being more or less red, varying much in composition and fertility, the eastern portion being generally poor and sandy, while that which lies between the Genesee and Niagara rivers is a good holding soil, and peculiarly adapted to wheat and grain in general.

2. *The Clinton Group* next forms a very narrow terrace of calcareous clay, the result of a mixture of the fragments of adjacent rocks, contributing a very productive wheat soil.

3. *The Niagara Group* has an enormous thickness of limestone above, resting on dark blue shales; the latter where they approach the surface produce stiff blue clays, which are heavy and expensive to cultivate, but under good management, after draining, &c., they become very productive soils. The escarpment of this limestone forms what is called, from Hamilton to the Niagara river, the *Mountain ridge*, affording near the latter, at Brock's Monument, a most commanding and magnificent prospect. "The view (says Professor Johnston) which the spectator enjoys from the top of the escarpment, is worth going a long way to see. Sheer down one looks over the scattered town of Lewiston, upon the broad flat forest lands stretching many miles back from the lake, and

eastward along its shores farther than the eye can reach. Here and there only, at the time of my visit, in all this distance, a clearing appeared upon this often marshy flat. Right in front lay the endless lake and its occasionally bolder shores beyond, with now and then a straggling sail or a distant steamer's smoke, all mellowed and blended by a four o'clock sun. I was much struck both with the extent and with the unsubdued wildness of the prospect, when I unexpectedly reached the cliff on my way from the Falls; and I could not help thinking how some two centuries hence, when all this low plain before me shall have been cleared, drained and cultivated,—when smiling villages and cheerful homesteads, and scattered flocks and herds overspread its surface, and the blue smoke may be seen dying away from many chimneys as the Sabbath bell draws the gathering people towards the frequent house of worship,—how many, in those days, for broad pictures of natural beauty, intense with countless little episodes of still life, will yet frequent this mountain ridge, when the noise of the neighboring cataract has wearied them, and softer scenes are wished for to calm and compose their fevered spirits."

We have only to observe in this graphic sketch, that if the learned Professor had travelled a little further west on this same mountain ridge, as it stretches far into Canada, he would have beheld beneath his feet, smiling corn-fields, extensive orchards, comfortable homesteads, and neat and thriving villages, with many a spire, reminding man of his higher destination, without waiting a couple of centuries for the imagination to realise. The modern appliances of Agriculture, which are being daily brought into requisition, will, ere long, give to this truly picturesque district, the finish and principal charms of an English landscape, only substituting the broad expanse of Ontario for the ocean.

4. *The Onondaga Salt Group* next succeeds, and is of comparatively great extent. As its name denotes it is in some places of its western portion abundant in strong brine springs, particularly at Syracuse, where salt is extensively manufactured. This group consists of several members, often abounding in calcareous matter, and the commingling of the various materials along their lines of junction, constitute highly friable and productive soils, producing in abundance the very finest qualities of wheat.

5. *The Helderberg Limestones and Sandstones* form with the Marcellus Shale a narrow belt, rising immediately behind the Onondaga Salt Group. "When I drove along the edge of this limestone (remarks Professor Johnston) it formed a high escarpment, from which the view of the flat lands below and of the country towards the lake was beautiful and extensive. Though far from what it was half a century ago, this great stretch

f undulating plain still seemed strange and savage to an eye accustomed to the finished and picturesque appearance of an English landscape. Swamps and lakes, and rude natural forests, with intervening tracts of land under waving corn, remind the spectator how much nature yet rules, how long human industry must patiently labor till before the asperities of a new country can be rubbed off, how many generations of the enterprising men who now possess it must still toil and adorn this fine land before it will smile at our feet like that which their forefathers left."

6. *The Marcellus Shale* overlies the Helderberg limestone, and mixing with it forms very productive soils, fertile in wheat and other productions. It is narrow in the State of New York. Farther to the west, however, it expands, and along the north shore of Lake Erie it forms a wide and valuable tract of land in the fast filling-up and fertile regions of Western Canada."

7. *The Hamilton Group* consists mainly of shales and clays, expensive and difficult to work, though in places where dry and calcareous, affording a pretty good arable and wheat soil. A large portion, however, is only fitted for pasture, and it is here the grazing and dairy country of Western New York may be said to commence.

8. *The Genesee Slate* is too thin to form an important agricultural feature of the country. It is itself poor, but where mixed with calcareous shales or marls it forms a productive soil.

9. *The Portage and Chemung Groups* consist of alternations of poor shales, flagstones and massive sandstones of enormous thickness, extending southwards into Pennsylvania, reaching a height of 1000 feet above Lake Ontario.

"The district (observes our author) occupied by these groups of rocks presents a complete contrast to the wheat regions,—a contrast rich in evidence of the close relation between geological and agricultural capabilities. When first cleared the virgin surface produces crops of wheat, but after the first crops,—as is the case in many parts of New Brunswick, which rest upon similar rocks, winter wheat becomes uncertain, and spring wheat can only be sown. Being thus found naturally poorer, it is less cleared and cultivated than the more favored land in the plains which border the lakes. Like poor lands among ourselves also, I may say like poor land in all countries,—it is occupied for the most part by a poorer race of cultivators, who direct their chief attention to the rearing of stock and dairy husbandry."

After speaking of the practical difficulties so often felt, in extinguishing or keeping down certain classes of weeds, from unfavorable seasons, courses of cropping, and a thousand other circumstances, which the farmer is often wholly unable to control, the Professor very justly observes:

No one will readily accuse me of a desire to undervalue the usefulness of *Chemistry* to Agriculture, and yet I have often had occasion to regret the evil influence of opinions hastily ex-

pressed by ill-informed persons,—as if this branch of knowledge alone were able to bring the most important and difficult of arts to speedy perfection. The longer a cautious and truth-seeking man lives, the wider will appear the range of knowledge, theoretical and practical,—the more numerous the circumstances to be taken into consideration before he can arrive at an accurate solution even of what some look upon as simple and superficial questions."

We must make room for the concluding paragraphs of this able and clearly written article, inasmuch as all we have ever said or written on what we believe to be the almost unparalleled natural fertility of the Canadian Peninsula, which is now fast filling up, and already teeming with a prosperous and contented population, is amply confirmed by the high authority of Professor Johnston.

"The second observation I wish to add, refers to the extension of the richest wheat-bearing formations of Western New York into the upper part of Canada West. The consequence of this extension is the reproduction in this new region of the great natural capabilities of the country I have been describing.

"Bounded on the east by Lake Ontario, on the west by Lake Huron, on the south by Lake Erie, and on the north by Manatoulin Bay, stretches a wide peninsula, occupying an area three or four times as large as the wheat region of Western New York, and covered entirely by those rocky formations on which the fertility of the latter region mainly depends. Proceeding westward from the head of Lake Ontario, we pass in succession over the surface of the Medina sandstone, Niagara limestone, the Onondaga salt group, and the Helderberg limestone and shales. On these, as the map and sections contained in this paper show, the principal wheat region in Western New York is situated. It will also be recollected that among these the Onondaga salt group is especially conspicuous for the natural fertility and friableness of its soils, and for the ease with which they can be worked and cultivated.

"Now in this peninsular portion of Canada West, the Medina sandstone and Niagara limestone expand a little after they turn round the western end of Lake Ontario, and then run towards the north in belts somewhat broader than those which they form in Western New York. But the Onondaga salt group widens to such a degree as in a line due west from Toronto to be upwards of sixty miles across, and to occupy almost the whole breadth of the peninsula between the two lakes Ontario and Huron. The natural capabilities of this new region, as a whole, may be inferred from what I have already said of the results of experience in the State of New York. So far as depends upon soil, it ought to be one of the richest agricultural regions in North America.

"Towards the southern end of the peninsula again, and along the entire northern margin of



Lake Erie, of the Lake and River St. Clair, and of Gratiot's Bay, in the southern part of Lake Huron the Helderberg formation extends. It will be recollected that I have above described this rock, as it occurs in Western New York, to be in some places covered with thin soils productive of wheat; but that over it lie certain calcareous shales (Marcellus shales) which when not entirely removed from the surface by the action of ancient waters, form a soil equal to almost any other in productive capability. The large portion of this Western Canadian peninsula, over which this Helderberg formation extends, must therefore, like that occupied by the Onondaga group, contain many tracts of fertile land, and this, as well as its neighbourhood to the Lake, is no doubt a cause of the rapidity with which it is in the process of settlement. Indeed, when we consider that nearly the whole of this peninsular region consists either of the Helderberg rocks or those of the Onondaga group; we cannot help predicting both a rapid filling up and a great future, in many respects, to this most interesting portion of Canada.

"Thus from the humbler task of explaining why certain regions have exhibited and still manifest a singular natural fertility, geology advances to the higher gift of prediction. United theory and observation enable it to point out where rich and desirable lands are sure to be found,—to inform the statesman of the true value of regions still wild and neglected, to direct the Agricultural emigrant in the choice of new homes, and, looking far into the future, to specify the kind of population and the processes of industry which will hereafter prevail upon it, the comparative comfort, wealth, numbers, and even morality, of its future people."

#### BUTTER MAKING.

This is one of the most important matters at this season of the year. We will all readily admit the pleasantness of good butter on our tables, and the farmer knows the advantage of having a good, fresh, sweet article, and plenty of it, for sale, instead of the wretched stuff under the name of butter which we so often see in our markets. We insert in another place, an excellent essay by Mrs. Trail, on Butter Making, to which the first prize was awarded by the Township of Hamilton Farmers' Club, and which is worthy of a careful perusal. We regret being compelled to condense this essay considerably: for this, the press of matter and our limited space must serve as an apology. We are happy to find that Mrs. Trail, who is so favourably known as a writer of a very pleasing description of light literature, can on occasion apply her talents to the elucidation of such useful subjects as this Essay treats of. We trust we shall hear from her again on similar topics.

#### FARMERS AND FARMING IN CANADA.

We are not disposed to dispute the truth of the following remark from the *Genesee Farmer*. We believe the statement that Canadian Farming is superior to that in the United States, to be perfectly correct. But our farmers must not therefore rest satisfied with their progress and conclude that there is no occasion for further improvement. There is still abundant room for that.

"It is with considerable reluctance that we admit the superiority of Canada farmers and farming as compared with those of our own much cherished Western New York; and we still hope that, taken as a body, our cultivators are in advance. But the more we learn of our neighbors across the lake, the higher is our respect for their general intelligence and skill as husbandmen."

#### Literary and Miscellaneous.

WILLIAM McDUGALL, ESQ., EDITOR.

#### FAMILIAR CHEMISTRY.

BY MRS. M. F. H. THOMAS.

##### CHAPTER II.

The fifty-five elements of which I have spoken are called "ponderable agents," because they can be weighed. They constitute all sensuous objects—all that is tangible in our world. Their properties are, extension, form, divisibility, impenetrability, and inertia. Attraction is not an inherent property, but depends upon a power whose proportions increase and diminish it. These substances are all incapable of spontaneous change and were there no extraneous force to effect them would remain eternally in the same condition.

There is another principle, which is imponderable, which cannot be weighed, or handled, studied, except in its manifestations. Bodies imbued with it, gain no appreciable weight. Of it nature we know little, very little; yet its manifestations are a part of every-day life. Unlike the other elements of which we have spoken, its *existence* is action, in some form. All change which cheer and beautify our earth—all the wonderful phenomena of nature, are produced by it. It is, under God, the *Architect of the Universe*. That principle has been variously called, light, heat or caloric, electricity, galvanism, and, in the animal organism, nervous influence, but they are, undoubtedly, but manifestation, mutation and correlations of one power acting under di-

ferent circumstances—that *life principle* of which I have spoken.

LIGHT is composed of three primary, or complementary, colors—red, yellow, and blue. Of these all other colors are compounds, and their union constitutes white light. Light is decomposed by passing through a triangular piece of glass, called a prism. By this instrument, however, different shadings and blendings of the primary colors are also exhibited. It is a strange thought, that all the colors which deck our earth, exist, not in the objects which exhibit them, but in the pure white flood of sunlight which renders them visible. Such, however, is the case. The different colors depend upon the chemical property which objects possess, of absorbing rays of particular colors and reflecting others. Thus, for instance, the foliage of Spring absorbs the red rays, reflecting the yellow and blue. Now, it is by the rays of light, reflected from bodies, entering our eyes, that we perceive them, and if only the blue and yellow are reflected, the sensation must of course be given—the *only color on which the eyes can rest for any length of time, unrelieved, without pain.*

Caloric is heat considered in the abstract. Heat penetrates, and is contained in all substances; which it expands, more or less, in proportion to the quantity. By its expansive power it preserves all fluids and liquids as such. But for that principle, it is altogether probable, that all fluids—nay, the very air we breathe, would become solids, and our earth be one vast ball of ice, destitute of life or change. All gases are supposed to be but the vapors of substances which at some temperature are solids, as steam is that of ice. Carbonic acid has, indeed, been reduced to a solid. The expansion of metals by heat is a fact well known, and constantly applied in mechanics.

Heat exists in frozen water to a considerable degree, as is shown by the fact that a temperature above seventy degrees below the freezing point has been produced. The most intense cold is produced by “freezing mixtures,” or a preparation of a solid and fluid, or of two solids, which have an affinity for, and dissolve, each other, producing liquids, which by their much greater capacity for heat abstract it from surrounding objects, producing an intensity of cold proportioned to the perfection and rapidity of their change of form. By capacity for heat I mean the *absolute* quantity of heat which substances will contain at the same apparent temperature. Fluids have a much greater capacity than solids, as a considera-

ble quantity of heat becomes latent, or hidden, to preserve them in the fluid form. Thus, when a solid passes into the liquid form cold is produced when a liquid becomes solid heat is evolved. Hence the efficacy of water in preserving our cellars from frost. Salt and pounded ice make a very efficacious freezing mixture. The common Thermometer denotes but 32° below the freezing point, that being nearly the temperature at which mercury freezes, hence in those used to determine lower temperatures alcohol is substituted for mercury.

All substances are conductors of heat, though some in a much greater degree than others. For instance, place a lump of ice under an iron plate and another under a layer of clay of the same thickness, and expose them to the sun's heat. The first will melt in far less time than the second. As great a difference will also be perceived in the temperature of the two media. Who has not noticed how much warmer rocks and stones feel when exposed to the sun, than the earth around them. The metals are good conductors—the earth is a poor conductor. Yet when substances are colder than our bodies good conductors feel coldest, as they abstract heat most rapidly from them. Witness the apparent temperature of the wall and a flannel garment in a cold room. Air, earth, and water are poor conductors of heat. If it were not so, we should be literally roasted in summer, and frozen in winter. It is the air contained in the interstices of cotton wool which renders it a warmer article for clothing than solid cloth. Being slow to imbibe heat and slow to impart it, these substances preserve a comparative equilibrium, which accounts for the comparative warmth of well-water in winter and its coolness in summer. The frost can seldom penetrate many inches into the ground, and the retained warmth, beyond its reach, preserves the roots of plants from perishing with cold. Again, in summer a moist coolness is preserved a little below the surface, thus preventing their perishing with heat and thirst.

A considerable degree of heat is necessary to the activity of the animal functions. That class of animals which do not generate heat, called “cold blooded,” become torpid at certain temperatures, as well as those warm blooded animals which hibernate, or sleep, during winter, of which the common bear is an example. A too intense degree of heat, also, produces torpidity in cold blooded animals, and languor and exhaustion in warm blooded ones. The latter, however, possess



an almost incredible power of maintaining an equality of temperature through vicissitudes of heat and cold. A variation of a few degrees from the normal standard of internal heat proves fatal; yet, human beings have borne with impunity, for some length of time, temperatures ranging from below zero, or 0°, to 600°, or nearly that number. Of this power of resisting heat and cold, civilized society, in its present debilitated state, has little conception. While shivering under our furs, we can scarce credit the "tales that our grandfathers tell," or conceive, in our warm flannel and close rooms, how the hardy savage can expose his bare limbs to the keenest weather, and sleep cosily with no covering but his blanket, in his open wigwam. Strange, that civilization has hitherto degenerated physical man, while it has so largely developed the mental. Will not the time come, when men will learn that the noblest development of the spiritual must be based on a sound organism? Ignorance of this important fact has caused most, perhaps all, the concomitant evils of civilization. Sickly bodies will make sickly minds, and sickly minds will have sickly manifestations. Close, over-heated, ill-ventilated rooms, where the air is so loaded with carbonic acid, as to reduce the organism to the condition of those reptiles whose blood is but half aerated, combined with unnecessarily warm clothing, which, by retaining heat and moisture on the surface, debilitates the skin; and gross, concentrated food; over-eating, late suppers; late hours, tight dresses, neglect of bathing, indolence,—in one word of plain English, **FASHION**, has rendered us what we deserve to be, a race of shivering, nervous pigmies compared to what we might have been.

Brooklin, April 1st, 1854.

#### THE FARMER'S DAUGHTERS.

BY MRS. M. F. H. THOMAS.

What is the reason that the Farmers' daughters are so much more obnoxious to educational restrictions than anybody else's daughters? Or why should there rest a peculiar unction upon them, from which other females are exempted? Are they formed of different clay; or with different attributes from others? Do not like causes produce like effects upon them, with universal humanity? Are not their natures—their need, spiritual and physical, the same as the daughters of professional men? Why then should their time for education be shorter? Are their prospective duties, as wife and mother, any more sure and onerous than other females? I know that the *spirit of caste* is abroad in the land;

but there is too much good sense and radicalism in the public mind, for its undisputed sway. Its limits are perpetually changing; and *farmer's daughters do not always make farmer's wives*. They who were born and bred farmer's daughters, often grace the highest circles of society—wives of our statesmen, philosophers, and even, I am sorry to say of *genteel do-nothings*, while the daughters of professional men, and even so-called gentlemen, are often happy to become wives to our farmers.

But even were not this so, what is there so peculiar in the situation and necessary training of the farmer's daughters? Health, and perfect physical development, is necessary to all; for without it life is a burden, and usefulness is destroyed. All females should be educated for the situation of wife and mother. All females should be instructed in the necessary processes of house-keeping; for such knowledge is required in a mistress, to preserve a well-ordered household, and besides, who knows what turn the wheel of fortune may take? All human beings should have their intellectual and moral natures developed to the utmost possible extent. What more, or, what less, is required for a farmer's daughter? Surely, among the green fields, pure air, most wonderful phenomena, and choicest gifts of nature, the mind as well as body, should find its most perfect development. If there be a being whose situation I envy, it is the intelligent and educated farmer's daughter, whose home is in the great laboratory of nature.

Brooklin, March 30th, 1854.

#### Reviews, &c.

*How to choose a good Milk Cow, &c.*—Glasgow: Blackie & Son. Toronto: Maclear & Co., 1853.

This is an excellent treatise, abounding in valuable, practical information. The first part is a translation from the pen of J. H. Magne, Professor of the Veterinary School, Alport. It consists of a description of all the marks by which the milking qualities of cows may be ascertained. The second part, or Supplement, is written by Mr. John Haxton, and contains an interesting account of the Dairy Cattle of Britain; their qualities, management, and productive results; with practical hints for selecting. M. Magne's are founded upon the researches of Monsieur Guenon, the ingenious advocate of the "eucheon theory," and are designed to explain, modify, and render more practical the statements of the latter, and to disencumber them of certain fanciful hypotheses and wise-drawn refinements and calculations, which are otherwise calculated to engender scepticism as regards the entire system propounded. The work is illustrated by a large number of well executed engravings, which render the text more easily understood, and the price is only 3s. 9d.

*The Anglo American Magazine*—Toronto: Maclear & Co. April 1854.

This Canadian production continues to show signs of a vigorous growth. Its original literature is healthful and instructive, and its selected matter, which forms a much smaller portion of each number than is usual in such publications on this con-

tinent, is evidently made with care and judgment. The April number contains a large and clearly engraved map of the Seat of War, accompanied by a descriptive paper; an engraving of the Empress Josephine, and a capital view of Barrie, County of Simcoe; a place that is rapidly growing into importance. The style in which the engravings are executed reflects great credit on Mr. Maclear's establishment, and shows that this important department of Art is making certain progress among us. The meritorious effort to diffuse among our people the elevating spirit of a native literature, is richly deserving of a generous support.

*Chambers's Journal of Popular Literature, Science & Arts—New Series: Part 2—March 1854.* W. & R. Chambers, London & Edinburgh: A. H. Armour & Co., Toronto: H. Ramsey & John Armour, Montreal: P. Sinclair, Quebec; A. Bryson, Bytown: W. Allan, Perth: J. Duff, Kingston: R. R. Smiley, Hamilton: J. M. Graham, London, C. W.

The second part of the new series of this popular and long established Journal fully sustains the high opinion we formerly expressed on the merits of the first. It does not contain a single article which may not be perused with pleasure and improvement by all descriptions of readers. "Wearyfoot Common," an original tale from the well known pen of Leitch Ritchie improves as it progresses; and the monthly papers on the progress of science and arts, and the Library and the Studio, contain much useful and interesting matter, carefully condensed. It will be remembered that Mr. Wm. Chambers, made a tour through British North America and the United States during the latter part of last year, and we have two papers in the present part, the beginning of a series, as the fruits of his observations. These articles are entitled "Things as they are in America," and they cannot fail to interest deeply a large class of readers on both sides of the Atlantic. We shall probably notice them more particularly on future occasions.

*The fourteenth Annual Report of the Restigouche Agricultural Society: Dalhousie, 1854.*

We are indebted to the courtesy of Dugald Stewart, Esq., the Secretary & Treasurer of this Society for a copy of their Report, which indicates the steady progress the Society has made for many years. While grain and root crops have received due attention, it seems that very considerable improvement has been effected in the important classes of horses, cattle and other animals of the farm.

*Norton's Literary and Educational Register, for 1854*  
—New York: C. B. Norton, 71 Chambers St. et.

Here is a publication of 290 pages filled with information of essential importance to every one interested in books, for the astonishingly low price of 38 cents! We have in the commencement interestingly written descriptions of several of the more important public libraries of Europe, accompanied by well executed engravings of the buildings; followed by a copious account of the numerous libraries in the United States, and a large mass of Library and Educational Statistics, possessing a general interest. Then follow alphabetically arranged lists of all works published in the United States, Great Britain, France, Germany, &c., during 1853, denoting size, price, publishers, &c. No individual in any way interested in literature and books, ought to be without *Norton's Annual Register*; and to Booksellers, Li-

brarians, Clergymen and Students, *Norton's Literary Gazette*, published fortnightly, at the small cost of \$2 per annum, bringing up to the latest moment all that is new and interesting in the literary world,—is equally indispensable.

*Morton's Cyclopedia of Agriculture.* Edinburgh and London: Blackie & Son. Toronto: Maclean & Co.

The high opinion which we expressed on the merits of this work at the commencement of its publication in monthly parts, has been fully sustained as it has progressed towards completion. Unlike many publications of the kind, it is no mere compilation, but every article is original, written by some person of eminence who is particularly acquainted with the subject of which he undertakes to treat. The list of contributors comprises several of the most eminent names among the living cultivators of British Science and Agriculture. The work, the more, brings up every department of husbandry—theoretical and practical—to the present state of knowledge.

Parts 23 and 24, now before us, contain, in addition to a vast number of shorter articles, a copious treatise on "Poultry," illustrated by several excellent wood engravings; "Reaping Machines," with some well executed cuts; "Road Making," also illustrated; "Rotation of Crops;" "Salts and Saline Manures;" "Sawing Machinery;" "Historical Account of the Agriculture of Scotland;" "Sewerage Manure;" and a very elaborate article on the history and management of the "Sheep." Each part has two beautifully executed steel engravings, and the wood cuts, illustrating the Botany and Entomology of the Farm, are exquisite specimens of art. Whoever studies this work cannot fail to obtain a correct and comprehensive knowledge of the principles and mode of practice of the most advanced state of Agriculture, as understood and pursued by the best farmers in Great Britain. It can be procured, as published in parts, of Maclean & Co., of this City, or of any of their travelling agents throughout the country.

#### EDITOR'S NOTICES.

##### AGRICULTURAL REPORTS.

Reports have been received at the office of the Board of Agriculture to the present date, from the following counties: Addington, Bruce, Carleton, Dundas, Essex, Frontenac, Glengary, Grey, Haldimand, Halton, Hastings, Kent, Lambton, Leeds, Lennox, Lincoln, Middlesex, Northumberland, Ontario, Oxford, Perth, Peterboro Prescott, Prince Edward, Russell, Stormont, Victoria, Waterloo, Welland, Wellington.

April 19th, 1854.

##### TO CORRESPONDENTS.

Several interesting communications are unavoidably postponed.

Mr. Charnock's third article has been necessarily crowded out of the present number. It will appear in our next.

##### SALE OF LIVE STOCK.

We request the special attention of our readers to the advertisement of Mr. Parsons's Sale of cattle, sheep and pigs, on another page. From the great attention which Mr. P. has paid to the selecting and breeding of his stock, and the general excellence and useful properties of his herd, we have no hesitation in stating, that parties desirous of improving in this important and remunerative department of Agriculture, would find this a most favorable opportunity of doing so.



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## IMPORTANT TO

## DAIRYMEN & BREEDERS

OF

## SHORT HORNS!

IN consequence of the ill state of health of Mrs. Parsons, and she being recommended by her Physician to visit the Old Country, together with other family arrangements, the subscriber has resolved upon discontinuing his Dairy altogether, and there will consequently be offered **FOR SALE BY AUCTION**, on Tuesday, 27th JUNE next, at his residence, Cudaffe Farm, near Guelph, C.W., the **WHOLE of his VALUABLE HERD**, comprising, Thorough-Bred Short Horn Cows, Heifers, and Heifer Calves; a two year's old, and yearling Bull and Bull Calves, with a number of choice Grade Durham Cows, Heifers with Calves, and two year's old Heifers, all nearly thoroughbred, and selected with skill and care for years past for his own intended use, from the deepest milkers in his Herd.

The Farmers of Canada, therefore, will now have an opportunity, seldom offered, to supply themselves with a foundation of a well-bred Milking Herd.

The Subscriber thinks it desirable to state that, he at first anticipated selling only a part of his Herd, but has decided otherwise, that it may not be said he had reserved the choicest of his Herd for his own use hereafter; *all*, therefore, will be sold without reserve to the highest bidder. A credit of nine months will be given.

To make the Sale more attractive, the Subscriber has concluded on offering some of his thorough-bred Leicester Sheep—chiefly young, and part of them by Mr. John Wilson's imported best ram. A number of his improved small breed of pigs (Lerd Radnor's and Lord Ducie's blood) not to be equalled for symmetry and quality.

Also a powerful Yoke of good Working Oxen.

H. PARSONS, near Guelph, C.W.

April 20th, 1854.

N.B.—The far-famed Bates' Duchess blood is infused more or less throughout this Herd, from the celebrated Stock of George Vail, Esq., of Troy, N. Y., and likewise the blood of the Herds of the Hon. Adam Fergusson, of Woodhill, and of John Howitt, Esq., of Guelph. Any comment upon the Stock of either gentlemen would be superfluous here.

Catalogues, with further particulars and Pedigrees, will be shortly out.

### DURHAM BULL CALVES.

THE Subscriber does not intend to rear any Bull Calves for sale this Season, *unless to Order*.

Five thoroughbred Cows, Duchess or Bates blood, are now expected to Calve.

Intending Purchasers will, of course, be at liberty to select.

ADAM FERGUSSON.

Woodhill, Waterdown,

## PURE BRED STOCK

### FOR PRIVATE SALE AT

## MOUNT FORDHAM, WESTCHESTER CO.,

### NEW YORK,

Eleven Miles from City Hall, N. Y., By Harlem R. R. Cars.

HAVING met with more success than I anticipated the past year, with the Catalogue of male animals at Private Sale, is the reason for offering this lot of animals. AND MY JUNE SALE BY AUCTION, WILL NOT TAKE PLACE. A full descriptive Catalogue with prices attached, will be published on the fifteenth of April, and I intend to be at home myself to see any who may call. I will sell at Private Sale, about 18 Short-Horns, 6 of which are young Bulls and Bull Calves. The Cows and Heifers old enough, will be in Calf, to the Celebrated Imported Bull "BALCO," (9918), or Imported "ROMEO," winner of the First Prize at Saratoga, in 1844; and also at the American Institute the same year.

The young Bulls and Bull Calves are some of them from Imported Cows, and sired in England; the others are sired by the Imported "MARQUIS or CARRABAS," (11789), winner of the First Prize at Saratoga, the past year, as a two year old.

Also, about 10 head of Devons, consisting of a yearling Bull, sired by "MAJOR," and 5 Bull Calves, sired by my Imported First Prize Bull, "FRANK QUARTLY," and several of them from Imported Cows. The Cows and Heifers old enough, will be in Calf to "FRANK QUARTLY." Also 6 or 8 Suffolk Sows; and several young Suffolk and Essex Boars. Also 2 Southdown Rams, imported direct from Jonas Webb; and 6 Yearling Rams, all bred by me from Stock on both sides, imported from Jonas Webb. Catalogues will be forwarded by Mail if desired.

All animals delivered on SHIPBOARD, or RAIL CAR in the City of New York, free of expense to the purchaser. The Devons are at my Herdsdale Farm, 12 miles north, to which place I will take persons both to and from.

MY FRIEND MR. N. J. BECAR, who is interested in several of my importations, will also sell about 10 head of Short-Horns, consisting of 4 young Bulls, and 5 or 6 Females. His young Bulls are also several of them from Imported Cows, and sired by the "LORD of ERYHOLMNE," (12205), and the celebrated First Prize Imported Bull "ROMEO." Mr. Becar's Cows and Heifers are in Calf to the Imported Bull, "MARQUIS or CARRABAS," (11789.) Mr. Becar can be seen at his Store, No. 187 Broadway, New York, at which place he will make arrangements to go to his Farm, at Smithtown, Long Island. His animals will be entered in the same Catalogue with mine, which can be obtained by addressing him at his Store, or to me at Mount Fordham. His animals will be delivered in the same manner as mine. Our Importations have been in almost all cases made at the same time, and are of equal merit, except that I have more in number.

TERMS, Cash on delivery.

L. G. MORRIS.

March 16th, 1854.

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## THE CANADIAN AGRICULTURIST,

EDITED by G. BUCKLAND, Secretary of the Board of Agriculture, assisted by Mr. H. Thomson and the Proprietor. It is published on the 1st of each month by the Proprietor, William McDougall at his Office, corner of Yonge and Adelaide Streets,

THE  
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OF THE

BOARD OF AGRICULTURE, AGRICULTURAL ASSOCIATION, &c.

VOL. VI.

TORONTO, JUNE, 1854.

No. 6.

Reports, Discussions, &c.

TOWNSHIP OF YORK FARMERS' CLUB.

The monthly meeting of this newly formed Club was held at Dawson's Inn, on Wednesday evening, the 12th ult., E. W. Thomson, Esq., President of the Club, occupied the chair. Among the members present were Messrs. J. Ross, J. Snider, B. Bull, J. Dunham, James Donnolly, P. Ross, G. Ward, James McIlveen, Chas. Clark, &c.

The following paper written by Mr. Hugh Ross, who was absent from indisposition, was read by Mr. McIlveen:—

THE BEST MODE OF FARMING.

MR. PRESIDENT AND GENTLEMEN,—

In accordance with the arrangements made and agreed to at our last meeting, I will now for a short time crave your indulgence, while I read my essay, or I should rather say an attempt at one. I am sorry, sir, for your sake, as well as for that of the other gentlemen present, that the task of getting up the first essay, had not been assigned to a clearer head, and abler pen, than has been employed for this occasion, to one whose time as well as abilities would have enabled him to do justice to the subject; to interest and amuse, as well as instruct. The system adopted, and I believe generally carried out, at public meetings, anniversaries, &c., where a number of speakers address the audience during the evening, the inferior preceding the superior, I think is a good one, and always attended with good effect; and in this instance as far as my case is concerned, I am sure it will not be inverted. You will now have the worst first, and then will be able more fully to appreciate the good, better and best afterwards. Without further introduction, I will proceed at once to make a few remarks on my

"subject," selected at our last meeting, namely:—"The best mode of farming."—Farming, sir, it has been often said, and cannot be too often reiterated, is, or ought to be, a subject of all-absorbing interest: it is one of those pursuits in which a man may properly engage, and in which, while he preserves his conscience, and his manliness, he is at the same time rendering himself, by his business, a blessing to the world. Farming, or agriculture, if you like the term better, is always, in every country that bears the stamp of civilization, the chief, the principal occupation of man. We have been informed on a former occasion, that about nine-tenths of the population of Canada are engaged in that most noble and honourable avocation.

There is an opinion which has crept into the minds of many of our young men, and as a consequence of indulging it, they look upon farming with a good degree of aversion. I would just say a few words on this point—and in the first place I would express my unqualified disapprobation of the idea, as being both false and ridiculous; it is this:—they consider farming is less noble and honourable, as a vocation, than many other pursuits. Now, if to be the owner and lord of the soil we till, of the hills and lawns, the running brooks, the giant trees laden with fruit, and to be master of our own time and efforts, relying only on the immutable Providence of the Creator for the rain and sunshine, combined with our own efforts, to give us bread; be not a position of independence and honor, then I know of none that is. But perhaps our young men would wish to have eminent examples to induce them to look on farming with any degree of favour. Then I would point them to some of the most distinguished Americans who thought it not beneath their dignity to assume the title of farmers; Washington for instance had no other profession; Jefferson, Jackson, Clay, and Webster, though they were distinguished as lawyers and statesmen, yet were proud to call themselves, and be called farmers. Hundreds of city merchants too might be enumerated, who in youth left the farm in disgust, for that which they then regarded as



a more honourable occupation, have since learned a useful lesson. Many have shaken off the dust of their feet upon the city, and retired to the healthful rural pursuits, once forsaken in disgust, happy in the fact that they have escaped from the turmoil, the anxious uncertainty and selfishness of the trading world, to find agreeable recreation and repose, on the broad generous bosoms of their own farms. They find that there is no envy in the soil they till, no malice, no ingratitude in the honest oxen and horses they use—nature's cornucopia is generously and freely poured in their laps, without stint or grudge, and they find that whoever is diligent, honest, and efficient in his dealings with the soil, is very rarely cheated in return. Whatever the sons of our good mother earth may be, as far as honesty is concerned, we invariably find she is neither knave nor bankrupt. She does not fraudulently stop payment, nor has she any respect of persons—no matter whose or what muscles they be, that bend over her bosom in well directed toil—no matter what the honest brow, that thins and sweats, in order that she may be put in harmonious action, with air, shower, and sunshine, but she acknowledges as a worthy son of her bounty, and fails not to crown him with her own green laurels, and to bestow upon him the choicest, the richest rewards of her inexhaustible treasures. I would now offer a few brief reasons as inducements, why young men should adopt, yes prefer this as a pursuit. First, it is a healthy employment—who so healthy, strong and muscular, as the farmer? Secondly, there is less chance of loss, and more certainty of good living, in this, than any other employment. Third, it is more independent, and this all will acknowledge. The farmer is his own master—he tills the soil, and the God of nature, who ordained that man should labour never repudiates, nor defrauds the worthy worker of the fruits of his toil. Nor is this all, the farmer can have his meals, and his evenings in comfort with his family—he has in a great measure the entire winter season to cultivate his social and intellectual faculties. If he only will, he can be well informed; he has the means and the time if he will but use them; and here I would just say, that our Township Council deserve the applause of every right minded man, in taking advantage of the government grant and supplying the community in which we live with valuable reading matter—it is to be hoped that every person will avail himself of such an opportunity—as we hope ere long to see these books in circulation. But to return, farming is a sphere in which there is less temptation to immorality, than that of most other pursuits. To be a successful farmer requires good sense, steadiness of purpose, energy, hopefulness, patience, and a love of nature and of home. Successful farmers, too, are men of invention, men of mechanical talent. The idea that the farmer has nothing to do with machinery, either in the line of invention, or in the exercise of skill in the use of tools, is in keeping with the clumsy contrivances for agricultural implements, and the tedious hand labor process of their use, as exemplified in old fashioned farming, say thirty or forty years ago,

as I have it by report. Then the old wooden plough was in vogue, which required a strong man to keep it in the ground, and make it tear its way through the soil, and it was, I am certain, labour for the team to draw it—then the fork of a tree answered for a harrow—then there were no cultivators, no mowing machines, no reaping machines nor thrashing machines, no light harrows with joints to adapt them to undulating surfaces. These, the implements of modern farming, have resulted from the exercise of the mechanical faculties among farmers.

Men who were educated as practical mechanics, and those who have received at the Universities an education, in Mathematics, Chemistry, Natural Philosophy and Mechanics, have adopted Agriculture as a pursuit, and enriched it with their skill and learning, so that the implements of agriculture from an ox-cart to a pair of sheep-shears, have a neatness, skill in construction, and adaptation to their uses, such as to challenge admiration, and invite the hand to their use as a matter of pleasure instead of fatiguing drudgery. These, sir, I think, ought to be matters of consideration for the young, and sufficiently inducing to determine them to become farmers, instead of hanging around the over crowded professions, and the commercial and mercantile interests, barely eking out an inglorious subsistence, when, if they would employ as much brain work, and halt the drudgery and anxiety in connexion with agriculture in our new and inviting country as they now employ to keep soul and body together in ill paid subordinate situations, they might rise to the dignity of men, and to the substantial platform of pecuniary independence, for, as before asserted, where can you find the man, or class of men, who follow other pursuits to be compared to the farmer in point of independence, freedom from anxiety and true happiness, I would say then to the young who have hitherto indulged a feeling of dislike to this noble and honourable pursuit, follow farming for a living, and if you are assiduous and diligent at your business, you will not have cause to regret your choice.

But, sir, perhaps I have occupied too much of your time by dwelling so long on the many inducements to engage in farming, which I feel confident none present, will for a moment question, I will then leave that for the present, and return to my subject, which I must say is rather an extended one—it is this: the best mode of farming; it is so extensive as to comprehend all the future essays or subjects of discussion that may be brought before us, and at the same time may be condensed and summed up in a very brief compass. The best mode of farming might be simply defined as follows:—Raising the largest amount of crops from the ground, at the least expense, and with the least possible injury to the soil. I think no one will dispute this definition of my subject. Yet, in order to accomplish these ends, few though they be in number, the farmer will require a certain amount (might I not say a large amount) of knowledge in his possession. Who can estimate the powers of the soil to produce, or set limits to its production when that soil is brought to the highest state of production

it is capable of?—Fifty tons of turnips, I have been informed, have been raised from one statute acre, and valuing these at one shilling per hundred—which would not be overreaching the mark,—gives us the handsome sum of fifty pounds worth from that one acre. This seems almost incredible, and would no doubt be ridiculed as untrue, by some of our backwoodsmen, who never saw, or perhaps never heard of, a model farm—but if doubted by any present, it can be corroborated by one of our members, whose privilege it was to see the crop growing.

When our Canadian farmers can compete with this, or come up any thing near to it, which I have no doubt at all they may—as it is freely admitted on all hands, that the soil of Canada, as far as regards its natural capabilities, its principles and component parts, cannot be surpassed by any other under the sun.—I say when our farmers have got their fields to such a state of cultivation as this, by draining, by subsoiling, by manuring, &c., all of which we will be taught hereafter, by those who can do the subjects justice—can handle them the right way—then I will say, our farmers have made a big step towards my subject—The best mode of farming. Now Sir, as I said before, my subject is so extensive, it will not be expected for a moment, that I could attempt to give even a passing glance at all the various subjects involved in it—in fact volumes have been written on it, and still they may be multiplied—new fields of investigation are continually being opened up to the gaze and astonishment of wondering man, by the scientific investigator, and none will dispute the acquisition that science has been to art in agriculture, as well as in other departments—although I would say most decidedly practice must always take the lead, and science follow in its train. Sometimes indeed, science, falsely so called, for it did not deserve the name, has advanced the most ridiculous and absurd theories—but, as I said before, it was not science or scientific men, but some would-be clever fellow for speculation, or else to exhibit ignorance.

I will now for a short time allude to a few of the more important subjects which demand the farmer's knowledge and attention, if he would be in the proper sense of the word, a successful farmer; and in the first place he should be acquainted with the nature of the soil, he tills—should know what kind of crops it is best calculated to produce, as it is a well known fact, that all soils will not produce the same kind of crop with equal success—he should understand what principle is absent from the soil that would be necessary to produce a good crop of a certain kind, he should also be acquainted with the best, cheapest and most efficient means of restoring such a principle or element to the soil either in the form of artificial manures or otherwise. He should also know how to improve the different qualities or kinds of soil that may be in his farm, as very frequently we meet with various qualities of soil on our farms. From a want of knowledge of this kind manure is often injudiciously and wastefully applied. But it may be asked, where can a knowledge of this kind be obtained. I answer, from standard works on Agricultural Chemistry—such as Johnston's, Leibig's, &c.

The farmer ought also to divide his farm, according to the quantity of land, I should say cleared land, he occupies, into such a number of fields as will be suitable for a regular rotation of the kind of crops he intends to cultivate; he should also pay particular attention to the kind of fences he makes, and endeavor to make those which will be most lasting and most easily repaired or renewed when they begin to decay; it is no inconsiderable expense, especially when timber is dear as it is now even in this place, to make new fences for the most part on a farm. I have lately read a plan or two recommended in fencing, which I will submit, it may perhaps lead to some beneficial conversation on this important point. One plan is in board fences, to bore an augur hole in the post in a sloping direction inwards and downwards for about two inches, just where the post will come in contact with the surface of the ground—or as the sailor would say, between wind and water—fill this hole with salt, which is said to be a great preservative of wood. It is recommended to steep the posts in sea water some time previous to putting in the ground; but as that would be rather inconvenient in this locality, perhaps the salt will answer the same purpose, at all events it would be worth while making the experiment, as it would not be very laborious or expensive, and would well repay the trouble if the posts lasted 5 or 10 years longer than they otherwise would have done.

It is also asserted by Mr. Preston, of Stockport, Pen., that if the posts be put with their tops in the ground, they will last three or four times as long as when they are put with the butt ends down. He also advises in making rail fences to place the heart side up. Some farmers cut their posts so long and mortise them in such a manner that when the lower end becomes rotten they can turn them upside down. I think this economical and good. I have read of a fence made in the following way which might answer well for line fences or fences along roads: A row of butternut trees were planted, and notches cut in them a few inches apart, as high as the fence would be required, rails were fastened in these notches from tree to tree, in time the wood of the tree grew around the rail in such a manner as to bind it firmly—no fear of it dropping out—and I am sure the posts would not readily rot. I consider this a durable fence. Might not pine or any other tree answer as well as butternut? So much for fencing; but, perhaps, I am treading on forbidden ground, however my subject embraces all the others, and therefore I consider myself at liberty to make a passing remark or two on any topic that claims my attention, more particularly as there is still abundant scope in reserve, in fact these subjects are so spacious as almost to be inexhaustible.

Farmers should also attend to draining their land in all cases where it is required, and practicable. Superfluous water resting on land always prevents and retards vegetation. Deepening should also be attended to, as it will stir up a quantity of subsoil which in a great part contains the inorganic food of plants, and also permits the roots to go deeper, and therefore they have a greater space to draw nourishment from. Stumps



should be eradicated as soon as possible, as they are always the nursery of a host of the most deleterious weeds, besides they are a nuisance in ploughing, harrowing, &c. It has been objected to on account of the expensiveness of taking them out; but I feel certain, where a man can afford to pay for their extermination, he will be remunerated in a shorter time for this expense than he at first sight would suppose. I would say in most cases, one year would suffice to defray the expenses incurred in this proceeding—let us make a rough calculation, in order to arrive at something satisfactory. Suppose a field to contain on an average 50 stumps to the acre—these with their suburbs of weeds will probably occupy one-tenth of the ground—the expense of taking out those 50, will be perhaps £2 10s. Suppose again this acre to be in good cultivation for mangel wurzel, or say turnips—it may produce 600 bushels, which would only be about 15 tons, an estimate not very high—allowing one-tenth of these or 60 bushels, to have grown on the place formerly occupied by the stumps, and these at 1s. per bushel will amount to £3, which would more than pay for eradicating these troublesome fellows, in one year. Farmers ought to pay more attention to their manure than what is commonly done. A great portion of the best of it is allowed to escape by exposure to the sun and atmosphere. Farmers should also invariably keep the best breeds of animals, as it is as easy feeding a good one as a bad one, and, as in the case of cows, one good one is worth two bad ones, and her keep costs no more than one. They should never keep more than they can feed well. Cows should also be provided, as indeed all animals should, with suitable houses in winter; it is a cheap practice that prevails in this country to a great extent of keeping cows out during the whole of a severe winter, often without even a shed to shelter them from the inclemency of the weather; besides they will not require as much food by one-third when kept comfortably warm, and will look much better—so that the saving would thus be considerable, not to say anything of the animal's comfort. I might, sir, go on, almost indefinitely with the different improvements that might be suggested in this department, which would be all necessary, fully to carry out my subject, "The best mode of Farming"; but I am afraid I have already trespassed too much on your time, and will therefore for the present, sum up with a few brief remarks. The farmer should endeavor (weather permitting) to do all his work at the proper time, each department in its due season, and always finish if possible one job before commencing another; he should cultivate the most profitable crops; he should add as much to his ground every year in the form of manure as what has been extracted by the crop; he should use the most improved implements of husbandry; he should always base his calculations on this principle, that his income may each year exceed his outlay, and thus while he is adding to his own wealth, he is also adding to the wealth of his country; and now, sir, I thank you and the other gentlemen present for your kind attention to these few unconnected remarks.

After the reading of the essay, the Chairman called on Professor Buckland to address the meeting. In the course of his remarks the Professor several times approvingly referred to the essay; illustrated very clearly several important points in practical husbandry that received light, and valuable suggestions from the experimental sciences, and the importance of higher and more suitable instruction to the rising generation of farmers, particularly in this great agricultural country. He remarked that he had just come from assisting in an examination at the Normal School, for the Governor General's prizes in scientific agriculture, and expressed great satisfaction at the progress which the pupils were making in that valuable institution. With several of the examination papers of his own class, in University College, he felt much pleased and encouraged, although the course had been much more contracted than it would be for the future. He trusted that by next session such arrangements would be completed by his several colleagues as would place agricultural instruction given in the College, on the most efficient and comprehensive principles. Votes of thanks having been passed to the writer of the essay and Professor Buckland for his interesting address, it was resolved that the next meeting of the Club be held on the evening of the second Wednesday in May, at the Red Lion Inn, Yorkville, when Mr. McIlveen will read a paper on "The rotation of crops."

#### TOWNSHIP OF HAMILTON FARMERS' CLUB.

##### AGRICULTURAL FAIRS, AND CHANGE OF SEEDS.

A very large assembly of the members of this Club took place in Cobourg on the 29th March, when very interesting addresses were delivered by several gentlemen. We copy below, slightly abridged from the *Cobourg Star*, the addresses by Messrs. Wright and Wade:—

Mr. WRIGHT rose and addressing the President said, that he had not prepared himself to speak on the subject assigned to him "Agricultural Fairs;" he felt, in fact, their utility was so well known to every one, who had any agricultural product to buy or sell, that anything he could say in favor of such meetings might just as well be left unspoken. However, as a speech was expected of him, he would endeavor to say something about a few matters connected with Fairs and Farmers' Clubs, which in his opinion could not be too often talked of.

It was not often any member of the Club had an opportunity of addressing a meeting such as this, where we usually had *tens*, to-day we have *hundreds*!—a fact certainly encouraging to those few individuals who, through good and through bad report, have unweariedly labored to keep alive our Club, the oldest in the Province, and now the parent of many others: whose object is solely to protect the best interests of our common calling by discussing questions relating to agri-

ture, and consequently to the best interests of our noble country. Our Club is neither sectional nor exceptional, although connected with our agricultural Society. We are always happy to meet with men engaged in other pursuits, who are willing to countenance us, and who can with very great propriety take a part in many of the objects which by our Constitution we can legitimately discuss. He saw many such here to-day, and could not help congratulating the President on having the honor to preside over the largest and most intelligent meeting of farmers ever assembled in the County of Northumberland. The one he had gone when farmers were looked upon as but a shade better in point of intelligence than the horses they drove; the various reports of the Farmers' Clubs in the Province clearly show that there are men amongst the farmers who can handle a subject practically and scientifically in a way, which was little expected; and sufficient, he thought, to make our teachers feel the necessity for a more severe course of study than has for a time prevailed. He would now make a few remarks on the subject of Fairs; it had been stated often to him that there would be a better prospect of establishing one in Cobourg than here we are now met; past experience would hardly bear this out. He believed that the system prevailing in Scotland was the true one to follow, namely: hold our meeting at such places that no extraneous business will interfere, and here, having but one object in view, it can be well and speedily executed; in short, where we *mind our own business*. He understood the Town of Cobourg was soon to build a Town Hall, and was rejoiced to hear some of the Town Council express themselves much in favor of appropriating part of it for a Corn exchange, where a weekly meeting of buyers and sellers could take place with advantage to both. One thing he was firmly convinced of, we meet too seldom; there is jealousy of feeling amongst farmers (cheers), which militates against themselves. There is no uniformity nor mode of fixing a price—it is the demand which always regulates that; but here the buyer only knows of one animal to bid him, and the seller of only one purchaser, it is quite evident both are unfavorably situated.—Fairs would entirely remedy this evil, and commerce establish an uniformity in price. If millers and dealers in grain choose to adopt a different system from that which now prevails, namely—paying a certain price for 60 lb. or a bushel of wheat almost irrespective of quality.—they choose to adopt old country practice, and proportionately rise or fall in price for wheat above or below a definite standard weight, they could in one year do more, for improving the cultivation of our cereals, than all the prizes given by Agricultural Societies will accomplish in seven. But so long as the farmer believes with too much truth in it that the miller will give as much for 60 lbs of smutty or for a mixture of wheat, barley and oats, as for a clear sample, there is truly but little inducement held out for the careful cultivator who, at increased expense, furnishes the manufacturer with the means of paying a bonus to his less deserving competitor;

but these, and many other evils, would, no doubt, gradually disappear. It is our duty, Sir, to point them out, at such meetings as this. Good results will assuredly follow the advocacy of a good cause independent of the channel through which it flows, and with this conviction he had spoken.

Mr. WADE said—It is stated in the programme of this day's proceedings that I should address you on the subject of changing of seeds from one township to another, and my friend Mr. Black, on the changing of seeds from one soil to another. The subject is somewhat hard to divide in this way, simply because the difference between one township and another is so small that the soil might be the same, the climate of necessity could not vary, and the only advantage in this way must be in changing from one kind of soil to another; supposing that in any township different varieties of soil existed, and which, in some degree is the cause in most of our front townships bordering on Lake Ontario, the front concessions being generally level: a clayey subsoil, resting on limestone, with a deep vegetable loam on the surface, rather conducive in ordinary seasons to produce too great a proportion of straw; the middle and rear concessions being rolling, also on a clayey subsoil, but often with a considerable depth of sand between the vegetable deposit on the surface and the clay below, rendering such soils less subject to the overgrowth of straw, but at the same time the quality of grain produced is better than on the richer soils, so far rendering the change from the one kind to another judicious. However, as I am infringing upon the ground intended to be left to my friend Mr. Black, and knowing so well the opportunities of observation he has had, and also the great amount of experience he has had both in Scotland and Ireland, as well as over ten years of practical observation in this township, I can safely leave all this in his own hands; and I will now simply confine myself to two or three experiments that have passed under my own immediate observation with respect to the subject on hand, (still, by the way, I might say, in parenthesis, that there is no country on the face of the globe more favored in this particular than our own, simply from our own composition as inhabitants—we are composed of emigrants from all parts of the British Empire, bringing the knowledge and experience which has passed under our observation, then we settle among the natives of the soil who have been borne here, and can see what they are doing, whilst now and then a Yankey strays across our border, just to shew us the way they go ahead in their country—all shewing that we have no occasion to go through the slow and expensive experiments they had to do in the old countries, but simply to avail ourselves of the tried knowledge of the age.) I will now state the special wants under my own observation with regard to the introduction of new seeds. When our lands were first cleared, fall wheat succeeded well on all soils that were not too swampy; but after a few years' cultivation, much of the land that had produced good crops when first cleared, were found too wet for fall wheat—what I now refer to is the front townships, but in the back townships



they labored under another difficulty, their wheat sown in autumn being in three seasons out of four smothered by the snow coming early in winter before the ground was frozen, and lying on the ground until late in the Spring, consequently Spring wheat under those circumstances, if a valuable variety could be introduced, was what they would be most anxious to obtain. The first variety of Spring wheat of any value introduced into our country was the Siberian, and shows what momentous results may proceed from small beginnings. I was engaged in the seed business in the year 1840, more however in the horticultural than in the agricultural department, and at that time was a subscriber to the *Genesee Farmer*, in which paper two varieties of Spring wheat were advertised for sale, and very highly spoken of; the one was Italian and the other Siberian. I requested one of the houses with whom I had dealings at that time to send me a bushel for trial. The year before a farmer in Otanabee had a small quantity of the same wheat sent as a present from a friend; it was sown, and succeeded so well that in two or three years there was quite a rage for it; and although I had grown it for two years or more,—as fall wheat could be grown on the front,—I had not noticed its value, and was quite astonished when I found the demand for it from the back townships, and as a proof of its value to those townships, I will state that what was told me at that time by a gentleman, one of the most extensive wheat buyers, at that time, in Port Hope, and who had for years bought the crops from the best farmers in Cavan and Monaghan: that when those farmers depended only on fall wheat, he might get from 200 to 300 bushels as their yearly produce; but after this description of spring wheat was introduced, he got from the same farms from 800 to 1,000 bushels annually. This variety, so excellent at first, after a few years degenerated, and is now hardly known; but several new kinds have been since introduced with more or less success. The variety mostly grown at present, is called Fife wheat, from the name of the person who introduced it,—and our sister township Otanabee, is also entitled to the credit of introducing it as well as the Siberian. Much of our rich lands undrained, which cannot be at all depended upon for fall wheat, will produce from 25 to 35 bushels of this variety of spring wheat to the acre, with only ordinary cultivation, (and maugre all the grumblings of the millers who like fall wheat best. Such crops, even at 6d. the bushel less than fall wheat are not to be sneered at, and until some system of thorough draining is established on all our flat farms, spring wheat will be the main dependence. Before I conclude I will state another circumstance which has come under my own observation, and has been the result of a judicious changing of seeds; in fact, as well as the encouragement given by the Township Agricultural Society giving premiums for crops judged in the field. In our sister County of Durham particularly in Darlington and Clarke townships, they have for several years given premiums for the best crops of fall and spring wheat judged in the field. The conditions were that

the premium crops should be threshed and sold for seed to the members of the Society at a small advance on the market price. This system induced them to import from the States and elsewhere the best varieties that could be procured and in conjunction with the premium system had the effect of getting them into a quality of wheat which is worth more in the market by 6d. per bushel than can be realised in Cobourg, Port Hope; and I am credibly informed that the reason why lower prices are obtained in our town of Cobourg and Port Hope than Toronto and elsewhere is from the inferior quality.

Mr. WRIGHT said,—He was extremely sorry that Mr. Black was called away from the meeting on important private business; we had lost the benefit of his great experience on the subject of changing seeds, but at another time he had promised to address us. He had farther to say the Directors of the Society intended purchasing a quantity of bone manure, and at their request he had communicated with Mr. Lamb in Toronto. The manure can be had in quantity at 1s 6d. per bushel, and would be given to members of the Society at that price adding charges.

#### GUELPH FARMER'S CLUB.

A meeting of this Club was held on the 1st of May. There was a good attendance of members, the President, Col. Saunders, in the chair. The subject for consideration was—"The importance of Root Crops to Farmers and the best mode of their cultivation." Mr. Parsons made the following remarks:—

"The benefits arising from a good root crop are so multifarious, and at the same time so certain, that I trust the discussion of its merits this evening will lead many here present, as well as others who are absent, to think as highly of its worth as I do, and that the cultivation of roots in the future may be far more widely practised in this country than it has hitherto been.

I am well aware, sir, that there are some individuals who assert that it is too expensive to grow a crop of roots in this country. To such I would say, only give it a fair trial, and I dare hazard a trifle that, at the end of three years, or in less time, you will think as I do on the subject. Besides, I would ask such individuals if it answered their purpose to bestow expensive labor upon a wheat or any other grain crop, why the necessary outlay should not answer upon a root crop, that will ultimately pay the farmer in a variety of ways, so much better. And now, Sir, I will endeavour to show, by asking a few questions, how and in what manner, the cultivation of roots will be beneficial.

Is it, then, of no consideration or profit to the farmer, to have a foul sterile piece of land brought into a good and profitable state of cultivation, that will ensure him three or four successive crops, if judiciously selected, each of double the

and weight that the same piece of land has yielded him before, and which a proper preparation of roots will most certainly effect? Is it of importance to the farmer, that he is enabled to have five or six, or even a larger number of cattle the butcher, according to the roots he grows? Is it again of no importance that he can turn off a number of fat sheep in the spring of the year, when both beef and mutton fetch a remunerative price? Is it nothing, too, I would ask, if the farmer can clip from a pound-and-a-half to two pounds more wool per head from his sheep, and yet at the same time daily increasing in weight, which will unquestionably be the case provided he get a portion of roots every day with their food? Is it, too, nothing in the scale, that sheep and cattle should all be in better health on such food? and especially, is it no pleasure to an owner looking through his stock, to witness to the nice sleek appearance of their skins, and the prospect of well filled udders when his cows give, with the promise of a good supply of fat for the butcher at Christmas; all resulting from a well stored root-house? Again, I will ask, is it nothing that a farmer should be able to rear than half fatten his pigs with parsnips, turn-beets, carrots, mangel-wurzel and the like, which he can easily do at a very considerably less cost than feeding entirely with grain, and meat of as fine flavor as can well be produced?

But sir, if all the circumstances to which I have alluded be not enough to convince the sceptic of the profit which he must derive from a good root crop, let him take fairly into consideration the advantages which he secures from the *quality* of his barn yard manure. This, sir, alone will more than compensate for any extra labour that he may consider his root crop demands. But it is not upon the root crop that the expenses ought to be charged. This is a most fallacious idea, though it may not be a general one, it is entertained by many whom I have heard excuse themselves on no other ground for not having a good supply of roots. The three or four succeeding crops will bear a portion of the outlay in turning the land into good culture. But I do not consider any charge need be made on that score, as the several advantages pointed out emanating immediately from the consumption of roots will more than pay any extra cost incurred. There is also another fact to be considered, and that of no small importance in the matter derived from a root crop, the amount of other food saved by the bulk of vegetable matter given to our stock. I am aware, too, of another excuse, and certainly one more plausible than that of inadvertence, on which others make for not furnishing themselves with a good crop of roots. It is the difficulty they experience in attending to a root crop in its different stages of growth; and, however willing I may be to admit the difficulty, yet as a man is short-handed and overpowered with other work, which is the lot of us all at times, still, though it may be surmounted by judicious arrangement, together with a certain amount of forethought and forethought—so much needed, but not practised, I am sorry to say, in this country on some farms.

I feel, sir, that it would be well, at this point of my subject, to state, for the information of those who, unlike myself, have not been accustomed to raise roots extensively, that they have very little idea of the enormous amount of labour that is saved by getting the first weeding, hoeing, and thinning of a root crop done at the proper moment. Neglecting this for even six or seven days later that it ought to be performed, will sometimes in the mugging days of June and July, when you can almost see your roots grow, be creative fully of five times, and in some instances, I may safely say from experience, ten times the labor afterwards; besides which, if longer neglected than I have stated takes place, you will lessen the yield of your crop very materially—for the amount of food, when the weeds become very strong and numerous, that goes to support them, ought to have been consumed by the crop you have sown. This is too often thought of little importance, or rather its importance is overlooked altogether, which ends as a matter of course in a very unprofitable result. And, sir, having stated my views, very imperfectly I must admit, with regard to the importance of the root crop to the farmer, I will now proceed to consider the most profitable description of roots, and to state as far as my own experience goes, the best mode of production. I must, however, be permitted to beg that anything I may advance on the subject may not be considered as in a spirit of dictation, or with a feeling even approaching to presumption in supposing for a moment that there are not those present who have practised the root culture as extensively as I have, and who are equally, or more competent to impart information on the subject; and in this opinion I hope to be confirmed by and by from their remarks.

Sir, if it were not expected that I should go a little deeper into the manner of preparing the soil for the growth of roots, I would sum the matter up in a very few words, and if the practice were followed, the issue would, generally speaking, prove advantageous: it is this—plough deep, manure heavily, and hoe and weed well! This practice, in a favourable season, is pretty certain to secure any man in a good and profitable crop, provided he sows at a proper period; for after all much of his success must depend on that. But as I presume there are those present who would wish other suggestions to be submitted for consideration, I will endeavor to condense as much as possible what I have to say; still, I fear, from the nature of the subject, that I cannot be so brief as I could wish, when I look at the range it affords.

A man cannot do wrong in ploughing up a piece of sod or stubble as early in the fall as possible, the sod being first covered with the strongest manure he possesses, and if the soil be of an adhesive texture, I would let it remain without drawing the harrow over it, that the furrow might receive all the action of air and frost that it can get, provided the grass did not show itself in the furrows. But if a light friable soil, I would certainly harrow it and leave it as compact as possible; for I think much mischief is often done by fall ploughing light land, receiving as it does the



action of the frost, and often being drenched with heavy rain at fall and spring before the crop is sown, when intended for spring grain. I would of course run the harrow again over such land previously harrowed, as well as over the heavier soil, as early in the spring as practicable, to prevent the grass starting. You cannot afterwards well harass the soil too much by ploughing, scuffling, and harrowing, if foul or of an unkindly nature; for at every operation you destroy a vast amount of weed seed germinating, as well as foul weeds and grass which have been robbing the soil of much nutritive matter that would otherwise have gone towards feeding the plants. This treatment I consider equally applicable to land that may have been unproductive for years, and although I have experienced the pleasure and profit of growing roots on a rich and well cultivated soil, it will often be found advantageous to cultivate land less favourably circumstanced. On a very light soil, I would not fall plough the land unless I could do so very early, and had the manure ready to deposit, unless it were in a very foul state; for certainly grass and weeds will not be decomposed if turned over only a few days before the frost sets in. Such are my principle reasons for fall ploughing light land.

Mr. PARSONS, regretting that circumstances over which he had no control had prevented his going so fully into the subject as he could have wished, added some remarks in reference to the propriety of a further supply of manure in the drills previous to sowing in spring, and enlarged on the relative advantages of the different modes of sowing, giving the preference to the raised drill system when the land was in a bad condition, but otherwise approving of distributing the manure broadcast, and sowing in drills on the level surface. Mr. P. concluded by recommending, from his own experience, the raising of parsnips and sugar beets conjointly with turnips and mangel-wortzel in larger quantities than was generally practised in the vicinity, as highly advantageous to the farmer.

A long discussion ensued, in which Messrs. Parkinson, Wright, Murton, and McCrea took part, but which from the late hour at which the meeting broke up, we can only very briefly notice. Mr. Parkinson was much in favor of raising root crops largely, by which means a larger stock of cattle could be kept and fattened, an increased quantity of manure obtained, and consequently a greater amount of grain grown. He advocated a thorough preparation of the soil, and recommended that turnip sowing should take place from the 15th to the end of June, an earlier sowing exposing the young plants to greater hazard from the fly. He was in favor of ploughing immediately before sowing, and preferred sowing on level to raised drills. He preferred imported to home raised seed, and stated distinguishing characteristics of the genuine article as full grown, round, plump, and dark colored. He was much in favor of giving the plants ample space for development, preferring a moderate quantity of large size roots to a larger number of smaller sized ones.

Mr. WRIGHT was disposed to have the plants

at such a distance apart as would give the best return in weight irrespective of the size of the roots, and entered into calculations to show that this could not be done by raising large roots a yard apart, but that a more circumscribed space, producing off from 3 to 5 lbs., would yield the most profitable return. He was rather inclined to the cultivation of parsnips and carrots under existing circumstances.

Mr. PARSONS approved of the drills 27 inches apart, and the plants 18 inches. Mr. WRIGHT preferred having the plants 18 inches apart in all ways. In regard to storing, the only recommendations not generally noticed were those of Mr. PARSONS, to let the roots lie four or five weeks to get thoroughly dry before pitting, and to cover with a layer of straw from 6 to 9 inches deep laid on like thatch; and that of Mr. CREA, to place air tubes in the pits to let off the steam.

Thanks were voted to Mr. PARSONS for his address, to the Press for their attendance and attention in reporting the proceedings of the Club, and to the President.—*Herald*.

#### PROCEEDINGS OF THE BOARD OF AGRICULTURE

The Upper Canada Board of Agriculture, according to notice from the Secretary, met at its office in Toronto on Wednesday the 3rd of May, 1870, at 11 o'clock in the forenoon. The members present were:—E. Thomson, Esq., President, Hon. Adam F. F. F. Thomson, John Harland, and R. L. Denison, Esq., Professor Buckland, and Mr. Sheriff Rutta.

After the minutes of the last meeting had been read and approved, a number of communications which had been received since the last meeting were laid before the Board. A communication was received from the Bureau of Agriculture, stating that the four members who had retired from office at the last election, viz: Messrs. Thomson, Denison, F. F. Thomson, and Harland, had been re-elected by vote of the County Societies. At a subsequent stage of the proceedings Mr. Thomson was re-elected President of the Board for the current year.

The Treasurer's Balance Sheet was submitted to the Board, showing that according to the accounts as previously audited, the amount received by the association, including the balance of the previous year of £175 15s. 7½d., was £175 15s. 7½d. for the financial year, commencing before the Exhibition at Toronto, and ending before that at Hamilton £2613 7s. 6d; the expenditure for the year, including outlay on the Experimental Farm, expenses of the Board, and expenditure on account of the Exhibition at Toronto was £2009 2s. 6d. of which £1236 19s. was paid in prepayment of the Exhibition at Toronto, leaving a balance on hand at the close of the last financial year of £604 4s. 7d.

A communication was received from Mr. F. F. Thomson of Hamilton, with the balance sheet of the Committee at Hamilton for the expenditure on the Exhibition in that city, showing that the amount at the disposal of the Committee at Hamilton for the Exhibition had been £385, and their expenditure £376 12s. 10d., leaving a balance on hand of £8 7s. 2d.

communication was received from certain gentlemen at London in reference to the next Provincial Exhibition to be held in that Town on the 26th to 29th September next. The matter was taken into consideration by the Board and the following five gentlemen were named on the part of the Board as members of the Local Committee at London to make arrangements in view of the Exhibition, viz: Jno. B. Askin, Esq., President of the County of Middlesex Agricultural Society, Thos. C. Dixon, Esq., M.P.P., John Steward, Esq., Warden of the County, Marcus James, Esq., Mayor of London, and J. B. Stethy, Esq. The Secretary was authorised to communicate with the committee, and to state that some members of the Board will meet them privately at London to make arrangements for the Exhibition.

Some matters of detail then came before the Board, which were severally disposed of, and the Secretary then read a sketch of a report of the proceedings of the Board and Association to be submitted to Parliament, which was approved and at half-past four the Board adjourned till the next day.

#### SECOND DAY.

Thursday, May 4th.

The Board resumed this morning at 9 o'clock, the same members being present as on the preceding day.

The first matter taken up was the revision of the Prize list for the next exhibition. The items were taken into consideration *seriatim*, and some of the premiums were increased considerably in number and amount, the principal increase being in the premiums for cattle. The matter occupied the time of the Board for several hours.

A resolution was then proposed, and after considerable discussion, carried, to the effect that as grain seeds are particularly liable to deterioration in this climate, it would be advisable for the Board to import a quantity of Oats, Barley, Peas and Spring Vetches, &c., from the United Kingdom, and distribute the same under certain regulations to the county societies at cost price.

The question of the improvement of the Experimental Farm on the University grounds have been taken up and discussed, it was resolved to proceed with the same immediately, and that the President, Secretary, and Treasurer have a discretionary power to consult with the Bursar, Mr. Buchan, and Mr. Cumberland, Architect, in reference to the erection of buildings.

The question of the importation of thoroughbred and improved stock, which has been repeatedly urged upon the Board, having been taken up and considered, and several communications upon the subject submitted, a resolution after full discussion was finally passed, not to make any direct investment this year of the funds of the Association with that object, but with the view of encouraging importation, that the Association should at the London Exhibition award to every male animal which shall be deemed worthy of the first prize, and which shall have been imported since the last Exhibition, double the amount of the Prize offered in the list.

The circular issued by the President to the county Societies, in reference to the Sydenham Exhibition, was approved by the Board. The President stated that he had received several answers from county societies in reply to the circular, and it appeared from the country papers that the matter had been taken up in several counties which had not yet communicated directly with him.

The proposal of Mr. Sheriff Treadwell, President of the Provincial Agricultural Association, to award certain Premiums for farms and gardens in the County of Prescott having been considered, the Board approved of the same, and were of opinion that the proposal of Mr. Treadwell is highly creditable to him, and will no doubt be of much interest, and productive of good results in the County where the prizes are to be awarded.

After the transaction of some further business, the Board adjourned.

#### POTATO CULTIVATION.

The following Communication, addressed to Lord Palmerston from the British Consul at Fiume, Illyria, is interesting, and may be of value to farmers. It may be that the thorough drying of cuttings for seed in the autumn, and keeping them over winter to plant in spring, may have a beneficial influence on the constitution of the plant:—

“British Consulate at Fiume,  
Sept. 30, 1853.

“My Lord—I humbly beg leave to address your lordship, at the request of a Mr. A. Frangi, a Tuscan gentleman, who is very desirous to lay before your lordship a sample of potatoes, this year's produce, on an experiment of his made from cuttings of diseased ones. As they prove to be of excellent quality, it is of great utility and benefit to agricultural interests that his method adopted to preserve and reproduce a crop of this nourishing food be explained; and, by laying this specimen before your lordship, he trusts you will find an interest therein to call the attention of agriculturists to follow up the experiment, in order to successfully preserve to themselves the means of conserving the seed necessary to insure them a crop of fine farinaceous and almost equal-sized fruit, and at an early period of the year.—Mr. Frangi last year finding his stock of potatoes fast decaying from disease, resolved on drying them, and had them placed near to a retort on his chemical works, (for he had read in the papers that in Russia something of the kind had been done) and in a dried state he continued the consumption for his house use during the winter; and in the spring, finding a beginning of vegetation, he had them cut up and planted separately from other potatoes, but near thereto. The dried cuttings were rather backward in breaking the



earth, after which their growth was manifestly more rapid and luxuriant than the other plants. They were precisely treated the same in hoeing and weeding, and on the 25th July were gathered, and produced an abundant and equal-sized potato. The other crop from the common cuttings did by no means produce the like, and have already given signs of decay as before; but not so the produce of the dried cuttings. The soil in which both sorts were planted is of a rather stiff, stony, clayish compost. The spring was very damp, the summer, however, proved very dry, yet the verdure of the dried cuttings maintained their verdure, which faded and perished with the other kind. Mr. Frangi has forwarded a similar sample of the potatoes unto the Marquis Rodolfi, President of the Tuscan Agricultural Committee, for his information, and he begs your lordship will excuse the liberty he takes in sending his sample, for he trusts your lordship will find an interest in this his experiment, by which the produce of a fine healthy fruit is so far secured to man. He begs a repetition of his method may be made in Great Britain, and he confides as favorable a result will ensue as here; thereby conserving the means of procuring an abundant crop for the following years of this most nourishing plant, and must be of great interest to the population of the United Kingdom. I most respectfully beg to inform your lordship that the sample-box is on its passage home in the British schooner Sprightly, of London, John Paul master, bound to Gainsborough from this port, with a cargo of oak-staves, to be forwarded on arrival.

"I have the honor to be, my lord,

Your most obedient and humble servant,

"CHARLE T. HILL, Vice-Cousul."

## Horticulture.

### PRUNING ORCHARDS.

(From the New England Farmer.)

Trees properly planted require attention during the first few years to form a well balanced top, taking out some and shortening other limbs.—After this the pruning required is very trifling—in most trees none during the ordinary life of man. But in this wicked world we must take things as they are and not as they should be, or would have been, with proper early attention and culture, and as far as practicable, remedy evils already existing.

The most common error in pruning is thinning out the whole interior or central portion of a tree to "let in the sun," thus destroying one-half of the bearing branches, leaving long, naked limbs producing fruit only at the ends beyond the reach of anything larger than a raccoon, without the aid of long ladders, lessening the quantity of fruit and injuring the quality. Apples protected by leaves are much *better, larger and fairer*, (being grown as Nature designed) than when grown on the ends of long branches, exposed to the sun in July and August. In the cool, moist and cloudy

atmosphere of England, this course is not only proper but necessary, some of our American people even requiring the trees to be trained to wall to ripen their fruit, but the course practised and taught by the best English cultivators is their climate, not for ours. A tree properly trained for them in a few years may be ruined by the suns and cold winters of New England.

Trees require different training, depending on varieties. A course proper to perfect the Northern Spy or Newton Pippin is wrong for Rhode Island Greening and northern varieties generally.

When old trees are grafted, a very different course of thinning out is necessary, and generally during the first few years it is necessary to cut out many of the grafts. It is of little use to pruned trees standing on worn out soils (as is the case with most of our orchards) without first cultivating, manuring and supplying alkalies, of which the soil has become exhausted; but as this art is already quite too long, I shall say nothing of cultivation.

When a tree throws out sprouts on its branch it is a sure indication of disease, and the natural remedy is to leave the best to form new limbs and gradually remove the old branches. If it is done with the *first* sprouts, it will be necessary to leave very few, and cut out old branches accordingly. Old decayed trees which have been entirely neglected, when filled with vigorous shoots, can in a few years have entire tops by reserving the strongest in proper places and cutting out all the old limbs. These, every man understands, should be cut close to the growing limbs, and so as to heal well, and covered with some composition. The best I have tried is composed of tar thickened with brick dust and applied when warm with a brush. Graft wax or Gum Shellac dissolved in Alcohol is likewise good to peel off on large limbs.

The time for general pruning in New England is in June or early in July, after the first growth. The sap is then rapidly formed, and descends from the leaves so that all fresh cuts commence closing immediately. Large dead and dying limbs may be cut through the summer, September and October, if covered with composition. All winter pruning is bad. February, March and April are the worst three months in the year for pruning any trees. Sap soon after ascends from the fresh wounds made by cutting large limbs, poisoning and killing the bark, and if a general pruning is then done, it is very destructive.

I am aware that winter or early spring pruning is advocated by many very intelligent men, in a country where every winter the thermometer falls from 10° to 30° below zero it is far better to let trees alone. If any one will notice an orchard so treated (and it is often done)—see it again in August with the black and dead bark on limbs and bodies caused by flow of sap, and mark progress a few years, he must be satisfied it will be as well to cut a tree at the roots and remove the entire, as to cut off one-fourth of its top in winter or early spring.

C. GODRICKE

# RULES AND REGULATIONS

## OF THE

### EXHIBITION OF THE AGRICULTURAL ASSOCIATION OF U. C.,

TO BE HELD

IN THE TOWN OF LONDON, SEPTEMBER 26 TO 29, 1854,

WITH THE

## LIST OF PRIZES.

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#### OFFICERS—1854.

##### *President :*

C. P. Treadwell, Esq., L'Orignal.

##### *1st Vice-President :*

David Christie, Esq., M.P.P., Brantford.

##### *2nd Vice-President :*

William Niles, Esq., London.

##### *Ex-Presidents :*

E. W. Thomson, Esq., Toronto.  
 Hon. Adam Fergusson, Woodhill.  
 H. Ruttan, Esq., Cobourg.  
 J. B. Marks, Esq., Kingston.  
 T. C. Street, Esq., M.P.P., Niagara Falls.  
 Wm. Matthie, Esq., Brockville.

*Treasurer :* R. L. Denison, Esq., Toronto.

*Secretary :* George Buckland, Esq., Toronto.

*Consulting Chemist :* Professor Croft, of University College.

*Editor :* Mr. James Fleming, Toronto.

*Printers :* Bank of Upper Canada.

#### THE BOARD OF AGRICULTURE,

consisting of the following Members, constitutes the Council of the Association between the Annual Meetings thereof:—

E. W. Thomson, Esq., *President*, Toronto.  
 Hon. John Rolph, Minister of Agriculture.  
 C. P. Treadwell, Esq., President of the Agricultural Association, L'Orignal.  
 Hon. Adam Fergusson, Woodhill.  
 Henry Ruttan, Esq., Cobourg.  
 R. L. Denison, Esq., Treasurer, Toronto.  
 David Christie, Esq., M.P.P., Brantford.  
 J. B. Marks, Esq., Kingston.  
 John Harland, Esq., Guelph.  
 George Buckland, Esq., *Secretary*, Toronto.

#### MEMBERS OF LOCAL COMMITTEE AT LONDON.

B. Askin, Esq., President Agricultural Society of Middlesex.  
 C. Dixon, Esq., M.P.P., London.

John Scatcherd, Esq., Warden of Middlesex.  
 Marcus Holmes, Esq., Mayor of London.  
 J. B. Strathy, Esq.  
 T. Locker, Esq., Malahide, Warden of Elgin.  
 G. Alexander, Esq., President Agricultural Society, Oxford.  
 Wm. Balkwell, Esq., London Township.  
 John Styles, Esq., " "  
 Wm. Moore, Esq., " "  
 George Robson, Esq., " "  
 James Quarry, Esq., McGillivray.  
 Wm. Barker, Esq., Town of London.  
 Wm. J. Fuller, Esq., " "  
 John Curling, Esq., " "  
 John B. Askin, Esq., *Chairman*.  
 J. B. Strathy, *Secretary and Treasurer*.

#### RULES AND REGULATIONS:

*Extract from the By-Laws of the Association :—*

"The Members of the Agricultural Societies of the several Townships within the County or United Counties wherein the Annual Exhibition may be held, and the members of the Society of the said County or United Counties, shall be also members of the Association for that year, and have badges accordingly; provided the Agricultural Societies of the said Townships, or the Society of the said County or United Counties, shall devote their whole funds for the year, including the Government Grant, in aid of the Association. The Office-bearers of all County Societies shall have badges of free entrance during the Show."

1. The payment of 5s. and upwards constitutes a person a member of THE AGRICULTURAL ASSOCIATION OF UPPER CANADA for one year; and £2 10s for life, when given for that specific object, and not as a contribution to the local funds.



2. No one but a member will be allowed to compete for prizes except in classes U. W. Y. and Z.

3. All stock and Articles intended for Exhibition must be entered in the Secretary's Books at London, before 8 o'clock on *Tuesday evening* the 26th of September; if by letter the postage must be paid, and the person entering must remit 5s., being the amount of subscription constituting a member.

*Blood Horses and Thorough-bred Cattle* must be entered, and have their full Pedigrees properly attested and sent to the Secretary in Toronto, *not later than Wednesday, September 20th.* No animal will be allowed to compete as *pure bred*, unless they possess regular Stud and Herd Book pedigrees, or satisfactory evidence be produced that they are directly descended from such stock.

Parties making entries by letter are requested to be particular in specifying the different articles they wish entered, that is, giving the class in which each is found in the Prize List, with the age of animals, the quantity or particular variety of other articles, &c. Entries will be taken at Toronto at any time up to the 20th of September. After the 21st they will be taken at London. If the applications for entries are received in sufficient time the cards will be forwarded to the address of the parties by mail; if not, they will be ready for them in London. Parties are requested to make their entries at as early a date as possible.

4. Badges from the Treasurer's Office will be furnished each Member, which will admit himself only free to every department of the Exhibition during the Show. Life Members admitted *free*.

5. Tickets of admission to those who are not members, 7½d. each time of admission. Carriages, including drivers 5s.; passengers to pay 7½d. each. Horsemen to pay 1s. 3d. each admission.

6. Every article exhibited for competition must be the growth, produce or manufacture of Canada, except Classes Y and Z. Live Stock for breeding must be the property of persons residing in Canada. All premiums for articles, except Stock, entered in competition, are to be awarded to the manufacturers or producers only.

7. Discretionary Premiums will be awarded for such articles as may be considered worthy by the Judges, although not enumerated in the list, and the Directors will determine the amount of premium.

8. In the absence of competition in any of the Classes, or if the Stock or Articles exhibited be of inferior quality, the Judges will exercise their discretion as to the value of the premiums they recommend.

9. The Judges, Competitors, and Officers of the Association only will be permitted to enter the Show Grounds until 2 o'clock, P.M. of Wednesday, September 27, at which hour Member will be admitted. Non-members will be admitted on *Thursday and Friday mornings* after 8 o'clock.

10. No Articles or Stock exhibited will be allowed to be removed from the grounds till the awards are made, or without the permission of the President, under the penalty of losing the premiums. An Auctioneer will be on the spot after the premiums are announced, and every facility afforded for the transaction of business.

11. Delegates, Judges, and Members of the Press, are requested and expected to report themselves at the Secretary's Office immediately on their arrival.

12. The Judges to meet at the Secretary's Office on the Grounds, on *Wednesday morning* at 9 o'clock precisely, to make arrangements for entering immediately upon their duties.

13. It being essential to the satisfactory working of the Exhibition that all articles be entered and forwarded in reasonable time, all such articles arrive on *Wednesday morning*, and not previously entered, will be charged an entrance fee of 5s. each. *All entries will positively close on Wednesday at 9 o'clock.* Articles arriving afterwards will be admitted into the Show Grounds but they will be entitled to compete only for *Discretionary Premiums*.

14. Arrangements will be made for Agricultural Lectures or Discussions during the evening of Wednesday and Thursday of the Show week.

15. The Treasurer will be prepared to commence paying the premiums immediately after the successful competitors have been declared, and parties who shall have prizes awarded them are particularly requested to apply for them before leaving London, or leave a written order with some person to receive them—stating the articles for which prizes are claimed.

The Local Committee will make arrangements with Steamboat and Railway proprietors for the Show at reduced rates; also with the Hotel and Boarding House keepers for accommodation of visitors at their ordinary fixed charges. Full particulars will be published hereafter.

PRIZE LIST.

HORSES.

CLASS A.—BLOOD HORSES.

1 Best thorough bred Stallion	£7 10
2d do	5 0
3d do	2 10
2 Best thorough bred 3 year old Stallion	5 0
2d do	3 0
3d do	1 10
3 Best thorough bred 3 year old Filly	4 0
2d do	2 10
3d do	1 10
4 Best thorough bred 2 year old Filly	3 0
2d do	2 0
3d do	1 0
5 Best thorough bred Mare and Foal	5 0
2d do	3 0
3d do	1 0

Pedigree to be produced.

CLASS B.—AGRICULTURAL HORSES.

1 Best Stallion for Agricultural purposes	£7 10
2d do	5 0
3d do	2 10
2 Best Heavy Draught Stallion	7 10
2d do	5 0
3d do	2 10
3 Best 3 year old Stallion	5 0
2d do	3 0
3d do	1 10
4 Best 2 year old Stallion	3 0
2d do	2 0
3d do	1 0
5 Best 3 year old Filly	4 0
2d do	2 10
3d do	1 10
6 Best 2 year old Filly	3 0
2d do	2 0
3d do	1 0
7 Best span Matched Carriage Horses	4 0
2d do	3 0
3d do	1 10
8 Best Span of Draught Horses	4 0
2d do	3 0
3d do	1 10
9 Best Brood Mare and Foal, or evidence that the foal has been lost	5 0
2d do	3 0
3d do	1 10
10 Best Saddle Horse	2 0
2d do	1 10
3d do	1 0

CATTLE.

CLASS C.—DURHAMS.

1 Best Bull	10 0
2d do	6 0
3d do	4 0
4th do	2 0
2 Best 3 years old Bull	8 0
2d do	5 0
3d do	3 0
4th do	1 10
3 Best 2 years old Bull	6 0
2d do	4 0
3d do	2 5
4th do	1 5
4 Best 1 year old Bull	5 0
2d do	3 0
3d do	2 0
4th do	1 0

5 Best Bull Calf (under one year)	4 0
2d do	2 10
3d do	1 10
4d do	15
6 Best Cow	5 0
2d do	3 0
3d do	2 0
4th do	1 5
7 Best 3 years old Cow	4 0
2d do	2 10
3d do	1 10
4th do	1 0
8 Best 2 years old Heifer	3 0
2d do	2 0
3d do	1 5
4th do	0 15
9 Best 1 year old Heifer	2 10
2d do	1 10
3d do	1 0
4th do	0 10
10 Best Heifer Calf (under 1 year)	1 10
2d do	1 0
3d do	0 10
4th do	0 5

N.B.—A Certificate of HERD BOOK PEDIGREES will be required of all animals in the Durham Class. The Pedigrees of others should be as full and correct as possible.

CLASS D.—DEVONS.

1 Best Bull	£10 0
2d do	6 0
3d do	4 0
4th do	2 0
2 Best 3 years old Bull	8 0
2d do	5 0
3d do	3 0
4th do	1 10
3 Best 2 years old Bull	6 0
2d do	4 0
3d do	2 5
4th do	1 5
4 Best 1 year old Bull	5 0
2d do	3 0
3d do	2 0
4th do	1 0
5 Best Bull Calf (under one year)	4 0
2d do	2 10
3d do	1 10
4th do	15
6 Best Cow	5 0
2d do	3 0
3d do	2 0
4th do	1 5
7 Best 3 year old Cow	4 0
2d do	2 10
3d do	1 10
4th do	1 0
8 Best 2 years old Heifer	3 0
2d do	2 0
3d do	1 5
4th do	15
9 Best 1 year old Heifer	2 10
2d do	1 10
3d do	1 0
4th do	10
10 Best Heifer Calf (under one year)	1 10
2d do	1 0
3d do	10
4th do	5



## CLASS E—HEREFORDS.

1 Best Bull	£10 0
2d do	6 0
3d do	4 0
4th do	2 0
2 Best 3 year old Bull	8 0
2d do	5 0
3d do	3 0
4th do	1 10
3 Best 2 years old Bull	6 0
2d do	4 0
3d do	2 5
4th do	1 5
4 Best 1 year old Bull	5 0
2d do	3 0
3d do	2 0
4th do	1 0
5 Best Bull Calf (under 1 year)	4 0
2d do	2 10
3d do	1 10
4th do	0 15
6 Best Cow	5 0
2d do	3 0
3d do	2 0
4th do	1 5
7 Best 3 years old Cow	4 0
2d do	2 10
3d do	1 10
4th do	1 0
8 Best 2 years old Heifer	3 0
2d do	2 0
3d do	1 5
4th do	10
9 Best 1 year old Heifer	2 10
2d do	1 10
3d do	1 0
4th do	10
10 Best Heifer Calf (under 1 year)	1 10
2d do	1 0
3d do	10
4th do	5

For the Best Hereford Bull, of any age not exceeding 4 years, that has several cows in the Province this season. Prize offered by Baron de Longeuil 10 0

## CLASS F.—AYRSHIRES.

1 Best Bull	£10 0
2d do	6 0
3d do	4 0
4th do	2 0
2 Best 3 years old Bull	8 0
2d do	5 0
3d do	3 0
4th do	1 10
3 Best 2 years old Bull	6 0
2d do	4 0
3d do	2 5
4th do	1 5
4 Best 1 year old Bull	5 0
2d do	3 0
3d do	2 0
4th do	1 0
5 Best Bull Calf (under one year)	4 0
2d do	2 10
3d do	1 10
4th do	0 15
6 Best Cow	5 0
2d do	3 0
3d do	2 0
4th do	1 5

7 Best 3 years old Cow	4 0
2d do	2 10
3d do	1 10
4th do	1 0
8 Best 2 years old Heifer	3 0
2d do	2 0
3d do	1 5
4th do	15
9 Best 1 year old Heifer	2 10
2d do	1 10
3d do	1 0
4th do	10
10 Best Heifer Calf (under 1 year)	1 10
2d do	1 0
3d do	10
4th do	5

DIPLOMAS will be awarded to the *Breeders or Importers* of Bulls and Stallions which take *First Prizes*, when their names and residences are given.

The Judges shall ascertain, in deciding on Bull Calves in any of the foregoing classes whether the animal has been suckled or raised by pail and make allowance accordingly.

## CLASS G.—GRADE CATTLE.

1 Best Cow	£5 0
2d do	3 0
3d do	2 0
4th do	1 5
2 Best 3 years old Cow	4 0
2d do	2 10
3d do	1 10
4th do	1 0
3 Best 2 years old Heifer	3 0
2d do	2 0
3d do	1 5
4th do	15
4 Best 1 year old Heifer	2 10
2d do	1 10
3d do	1 0
4th do	10
5 Best Heifer Calf (under one year)	1 10
2d do	1 0
3d do	10
4th do	5

A certificate to be produced to show the breeding of animals in Class G.

## CLASS H.—FAT AND WORKING CATTLE, ANY BREED.

1 Best Ox or Steer	£7 10
2d do	5 0
3d do	3 0
2 Best Cow or Heifer	7 10
2d do	5 0
3d do	3 0
3 Best Yoke of Working Oxen	5 0
2d do	3 0
3d do	2 0
4 Best Team of Oxen, not less than 10 Yoke, from one Township, the property of any number of persons	10 0

Young cattle may compete, if the exhibitor thinks fit, in an older class than that to which they properly belong, but no animal will be allowed to compete in more than one of the foregoing classes.

CLASS I.—SHEEP.

*Leicesters.*

1 Best Ram, two shears and over	£4 9
2d do	2 10
3d do	1 0
2 Best shearling Ram	4 0
2d do	2 10
3d do	1 0
3 Best Ram Lamb	2 0
2d do	1 0
3d do	10
4 Best 2 Ewes, two shears and over	4 0
2d do	3 0
3d do	1 10
5 Best 2 shearling Ewes	3 0
2d do	2 0
3d do	1 0
6 Best 2 Ewe Lambs	1 10
2d do	1 0
3d do	10

*Southdowns.*

7 Best Ram, 2 shears and over	4 0
2d do	2 10
3d do	1 0
8 Best shearling Ram	4 0
2d do	2 10
3d do	1 0
9 Best Ram Lamb	2 0
2d do	1 0
3d do	10
10 Best 2 Ewes, two shears and over	4 0
2d do	3 0
3d do	1 10
11 Best 2 shearling Ewes	3 0
2d do	2 0
3d do	1 0
12 Best 2 Ewe Lambs	1 10
2d do	1 0
3d do	10

*Merinos and Saxons.*

13 Best Ram, two shears and over	4 0
2d do	2 10
3d do	1 0
14 Best shearling Ram	4 0
2d do	2 10
3d do	1 0
15 Best Ram Lamb	2 0
2d do	1 0
3d do	10
16 Best 2 Ewes, two shears and over	4 0
2d do	3 0
3d do	1 10
17 Best 2 shearling Ewes	3 0
2d do	2 0
3d do	1 0
18 Best 2 Ewe Lambs	1 10
2d do	1 0
3d do	10

*Fat Sheep.*

19 Best two Fat Wethers	3 0
2d do	2 0
3d do	1 0
20 Best 2 Fat Ewes	3 0
2d do	2 0
3d do	1 0

CLASS J.—PIGS.

*Large Breed.*

1 Best Boar, 1 year and over	£5 0
2d do	3 0
3d do	2 0

2 Best Breeding Sow, 1 year and over	3 0
2d do	2 0
3d do	1 0
3 Best Boar of 1854	3 0
2d do	2 0
3d do	1 0
4 Best Sow of 1854	2 0
2d do	1 10
3d do	1 0

*Small Breed.*

5 Best Boar, 1 year and over	5 0
2d do	3 0
3d do	2 0
6 Best Breeding Sow, 1 year and over	3 0
2d do	2 0
3d do	1 0
7 Best Boar of 1854	3 0
2d do	2 0
3d do	1 0
8 Best Sow of 1854	2 0
2d do	1 10
3d do	1 0

In this class the *precise age* of the animal is to be stated on the cards.

With the view of encouraging the importation of Improved Stock, double the amount of Premium offered in the list will be paid to the exhibitor of any male animal which shall receive the first Prize, and which shall have been imported since the last Provincial Exhibition.

CLASS L.—POULTRY.

1 Best pair of Dorkings	£1 0
2d do	10
2 Best pair of Polands	1 0
2d do	10
3 Best pair Large Breed Fowls	1 0
2d do	0 10
4 Best pair of Jersey Blues	1 0
2d do	0 10
5 Best Pair of Cochins China, Malay or Chittiepong Fowls	1 0
2d do	0 10
6 Best pair of Bantams	1 0
2d do	0 10
7 Best pair of Turkeys [White and Colored]	1 0
2d do	0 10
8 Best pair large Geese	1 0
2d do	0 10
9 Best pair of Muscovy Ducks	1 0
2d do	0 10
10 Best pair Common Ducks	1 0
2d do	0 10
11 Best pair of Guinea Fowls	1 0
2d do	0 10
12 Best collection of Pigeons	1 0
2d do	0 10
13 Best lot of Poultry owned by Exhibitor	2 0

CLASS L.—AGRICULTURAL PRODUCTIONS.

*The Canada Company's Prize of* £25 0

- For the best 25 Bushels of *Fall Wheat*, the produce of Canada West, being the growth of the year 1854. The prize to be awarded to the actual grower only of the Wheat, which is to be given up to and become the property of this Association, for distribution to the County Societies for seed.
- |       |                      |      |
|-------|----------------------|------|
| 2d do | [by the Association] | 10 0 |
| 3d do |                      | 5 0  |



The winners of the 2d and 3rd premiums will retain the wheat. Exhibitors in this class will be required to state the nature of the soil, mode of preparation, time of sowing, amount of produce per acre, and the kind and quantity of manure applied. Exhibitors in this class will not be allowed to compete for premiums offered for wheat consisting of two bushels.

2 Best 2 bushels of Winter Wheat	£2 10	24 Best bushel of Aberdeen Yellow Turnips	0 15
2d do	1 15	2d do	0 10
3d do	1 5	3d do	0 5
3 Best 2 bushels Spring Wheat	2 10	25 Best 20 roots Red Carrots	0 15
2d do	1 15	2d do	0 10
3d do	1 5	3d do	0 5
4 Best 2 bushels Barley (2 rowed)	1 10	26 Best 20 roots White or Belgian Carrots	0 15
2d do	1 0	2d do	0 10
3d do	0 10	3d do	0 5
5 Best 2 bushels (6 rowed)	1 10	27 Best 12 roots Mangel Wurzel (Long-red)	0 15
2d do	1 0	2d do	0 10
3d do	0 10	3d do	0 5
6 Best 2 bushels Rye	1 10	28 Best 12 roots Yellow Globe Mangel Wurzel	0 15
2d do	1 0	2d do	0 10
3d do	0 10	3d do	0 5
7 Best 2 bushels of Oats (white)	1 10	29 Best 12 roots of Khol Rabi	0 10
2d do	1 0	2d do	0 5
3d do	0 10	30 Best 12 roots of Sugar Beet	0 15
8 Best do (black)	1 10	2d do	0 10
2d do	1 0	3d do	0 5
3d do	0 10	31 Best 20 roots of Parsnips	0 15
9 Best 2 bushels of Field Peas	1 10	2d do	0 10
2d do	1 0	2d do	0 5
3d do	0 10	32 Best 20 roots of Chicory	0 10
10 Best 2 bushels of Marrowfat Peas	1 10	2d do	7 6
2d do	1 0	3d do	0 5
3d do	0 10	33 Best 4 large Squashes for Cattle	0 15
11 Best 2 bushels Indian Corn in the ear (white)	1 10	2d do	0 10
2d do	1 0	3d do	0 5
3d do	0 10	34 Best 20 lbs. Tobacco, growth of Canada West	1 0
12 Best 2 do (yellow)	1 10	2d do	0 10
2d do	1 0	35 Best Broom Corn Brush, 28 lbs.	1 0
3d do	0 10	2d do	0 15
13 Best bushel of Timothy Seed	2 0	3d do	0 10
2d do	1 10	36 Best 2 Pumpkins (yellow field)	0 10
3d do	1 0	2d do	7 6
14 Best bushel of Clover Seed	2 0	3d do	0 5
2d do	1 10	37 Best Peck of White Field Beans	0 15
3d do	1 0	2d do	0 10
15 Best Bushel Hemp Seed	1 10	3d do	0 5
2d do	1 0	<i>The Canada Company's Prize for Flax.</i>	
3d do	0 10	38 Best 112 lbs. of Flax	£6 0
16 Best bushel Flax Seed	1 10	2d do (by the Association)	4 0
2d do	1 0	3d do	2 0
3d do	0 10	<i>The Canada Company's Prize for Hemp.</i>	
17 Best bushel Mustard Seed	1 0	39 Best 112 lbs. of Hemp	4 0
2d do	0 15	2d do (by the Association)	3 0
3d do	0 10	3d do	1 10
18 Best Swedish Turnip Seed, from transplant- ed bulbs, not less than 20 lbs.	1 10	The roots in the above class to be of field, not garden culture.	
2d do	1 0	CLASS M.—HORTICULTURAL PRODUCTS.	
3d do	0 10	1 Best 20 varieties of Apples, named (six of each)	£0 15 0
19 Best bale of Hops, not less than 112 lbs.	5 0	2d do	10 0
2d do	3 0	2d do	5 0
3d do	2 0	25 Best 12 Table Apples, named (Fall sort)	10 0
20 Best Bushel Pinkeye Potatoes	0 15	2d do	7 6
2d do	0 10	3d do	5 0
3d do	0 5	3 Best 12 Table Apples, named (Winter sort)	10 0
21 Best bushel of any other sort	0 15	2d do	7 6
2d do	0 10	3d do	5 0
3d do	0 5	4 Best 12 Baking Apples, named	10 0
22 Best bushel Swede Turnips	0 15	2d do	7 6
2d do	0 10	3d do	5 0
3d do	0 5	5 Best 20 variety of Pears, named (3 of each)	15 0
23 Best bushel of White Globe Turnips	0 15	2d do	10 0
2d do	0 10	3d do	5 0
3d do	0 5	6 Best 12 Table Pears, named (Fall sort)	10 0
		2d do	7 6
		3d do	5 0

7 Best 12 Table Pears, named (Winter sort)	10 0	31 Best 4 sorts Winter Cabbage, including Savoy's	15 0
2d do	7 6	2d do	10 0
3d do	5 0	3d do	5 0
8 Best dozen Plums (Dessert) named	10 0	32 Best 12 Barrots for Table	10 0
2d do	7 6	2d do	7 6
3d do	5 0	3d do	5 0
9 Best 12 baking Plums, named	10 0	33 Best 12 early Horn Carrots	10 0
2d do	7 6	2d do	7 6
3d do	5 0	3d do	5 0
10 Best quart of Damsons (English)	10 0	34 Best 12 roots of White Celery	10 0
2d do	7 6	2d do	7 6
3d do	5 0	3d do	5 0
11 Best 12 Peaches, grown in hot house,	10 0	35 Best 12 roots of Red Celery	10 0
2d do	7 6	2d do	7 6
3d do	5 0	3d do	5 0
12 Best 12 Peaches grown in open air, named	10 0	36 Best dozen Capsicums	10 0
2d do	7 6	2d do	7 6
3d do	5 0	3d do	5 0
13 Best 20 varieties of Peaches grown in open air (3 of each)	15 0	37 Best collection Capsicums	10 0
2d do	10 0	2d do	7 6
3d do	5 0	3d do	5 0
14 Best 12 Quinces	10 0	38 Best 6 Egg Plants, purple	10 0
2d do	7 6	2d do	7 6
3d do	5 0	3d do	5 0
15 Best 4 clusters of Grapes (hot house)	10 0	39 Best 12 Blood Beets	10 0
2d do	7 6	2d do	7 6
3d do	5 0	3d do	5 0
16 Best 4 clusters Black Hamburgh (hot house)	10 0	40 Best Peck of White Onions	10 0
2d do	7 6	2d do	7 6
3d do	5 0	3d do	5 0
17 Best 4 clusters Black Grapes, grown in open air	10 0	41 Best Peck of Yellow Onions	10 0
2d do	7 6	2d do	7 6
3d do	5 0	3d do	5 0
18 Best 4 clusters white Grapes grown in open air	10 0	42 Best Peck of Red Onions	10 0
2d do	7 6	2d do	7 6
3d do	5 0	3d do	5 0
19 Best 4 clusters Grapes, of any others sorts	10 0	43 Best 12 White Turnips, Table	10 0
2d do	7 6	2d do	7 6
3d do	5 0	3d do	5 0
20 Best and heaviest 2 bunches of Grapes	10 0	44 Best Peck of Early Potatoes for seed	10 0
2d do	7 6	2d do	7 6
3d do	5 0	3d do	5 0
21 Best collection of Grapes, grown in open air	15 0	45 Best and greatest variety of Early Potatoes	15 0
2d do	10 0	2d do	10 0
3d do	5 0	3d do	5 0
22 Best Water Melon	10 0	46 Best 4 Squashes, Table	10 0
2d do	7 6	2d do	7 6
3d do	5 0	3d do	5 0
23 Best Musk Melon of any sort	10 0	47 Best and greatest variety of Vegetables	10 0
2d do	7 6	2d do	7 6
3d do	5 0	3d do	5 0
24 Best 12 Tomatoes	10 0	48 Best dozen Dahlias, named	10 0
2d do	7 6	2d do	7 6
3d do	5 0	3d do	5 0
25 Best assorted collection of Tomatoes	15 0	49 Best and largest and collection of Dahlias	1 0 0
2d do	10 0	2d do	10 0
3d do	5 0	3d do	7 6
26 Best 12 roots of Salsify	10 0	50 Best Bouquet of Cut Flowers	10 0
2d do	7 6	2d do	7 6
3d do	5 0	3d do	5 0
27 Best 4 heads Brocoli	10 0	51 Best Bouquet for Table	10 0
2d do	7 6	2d do	7 6
3d do	5 0	3d do	5 0
28 Best 4 heads Cauliflower	10 0	52 Best collection of Green House Plants, not less than twelve specimens	1 0 0
2d do	7 6	2d do	15 0
3d do	5 0	3d do	10 0
29 Best 4 heads Cabbage (Summer)	10 0	53 Best and greatest variety of Green House Plants	1 0 0
2d do	7 6	2d do	10 0
3d do	5 0	3d do	7 6
30 Best 4 heads Cabbage (Winter)	10 0	54 Best collection of Annuals in bloom	10 0
2d do	7 6	2d do	7 6
3d do	5 0	3d do	5 0



55 Best 6 Coxcombs	10 0
2d do	7 6
3d do	5 0
56 Best Floral Ornament or Design	1 0 0
2d do	15 0
3d do	10 0
57 Best collection of Verbenas, not less than 12 varieties	15 0
2d do	10 0
3d do	5 0
58 Best collection of Native Plants, dried and named	1 10 0
2d do	1 0 0
3d do	10 0

## CLASS N.—DAIRY PRODUCTS, SUGAR, &amp;C.

1 Best Fiskin of Butter, not less than 56 lbs.	£2 10
2d do	1 10
3d do	1 0
2 Best Cheese, not less than 30 lbs.	2 10
2d do	1 10
3d do	1 0
3 Best 2 Stilton Cheese, not less than 14 lbs each	2 10
2d do	1 10
3d do	1 0
The Cheese in both cases to be the make of 1854.	
4 Best Butter, not less than 20 lbs., in Firkins, Crocks, or Tubs	1 10
2d do	1 0
3d do	0 10
5 Best 30 lbs. Maple Sugar	1 0
2d do	0 10
3d do	0 5
6 Best 30 lbs. Beet Root Sugar	1 0
2d do	0 10
3d do	0 5
7 Best 20 lbs. Corn Stalk Sugar	0 15
2d do	0 10
3d do	0 5
8 Best Sugar made by Indians	0 15
2d do	0 10
3d do	0 5
9 Best Starch	0 15
2d do	0 10
10 Best Soaps [collection assorted]	0 15
2d do	0 10
11 Best Candles [collection]	0 15
2d do	0 10
12 Best collection of Bottled Fruits	0 15
2d do	0 10
3d do	0 5
13 Best 6 kinds of Preserves	0 15
2d do	0 10
3d do	0 5
14 Best collection of Confectionery	1 10
2d do	1 0
3d do	0 10
15 Best 20 lbs. Chicory, manufactured from roots grown in the Province this Season	1 0
2d do	0 10
16 Best barrel of flour	1 10
2d do	1 0

## CLASS O.—AGRICULTURAL IMPLEMENTS.

1 Best Wooden Plough	£2 10
2d do	1 10
3d do	1 0
2 Best Iron Plough	2 10
2d do	1 10
3d do	1 0
3 Best Subsoil Plough	2 10
2d do	1 10
3d do	1 0

4 Best pair of Harrows	1 10
2d do	1 0
3d do	0 10
5 Best Fanning Mill	1 10
2d do	1 0
3d do	0 10
6 Best horse-power Thrasher and Separator	5 0
2d do	3 0
3d do	2 0
7 Best Grain Drill	3 0
2d do	2 0
3d do	1 0
8 Best Seed Drill or Barrow	1 0
2d do	0 15
3d do	0 10
9 Best Straw Cutter	1 0
2d do	0 15
3d do	0 10
10 Best Smut Machine	1 10
2d do	0 15
11 Best Portable Grist Mill	3 0
2d do	2 0
3d do	1 0
12 Best Grain Cracker	2 0
2d do	1 10
3d do	1 0
13 Best Corn and Cob Crusher	1 0
2d do	0 15
3d do	0 10
14 Best Machine for cutting Roots for Stock	1 10
2d do	1 0
3d do	0 10
15 Best Clover Cutting Machine	2 0
2d do	1 5
3d do	0 10
16 Best Clover Cleaning Machine	3 0
2d do	2 0
3d do	1 0
17 Best two-horse Waggon	3 0
2d do	2 0
3d do	1 0
18 Best Horse Cart	1 10
2d do	1 0
3d do	0 10
19 Best Horse Rake	1 0
2d do	0 15
3d do	0 10
20 Best Metal Roller	2 15
2d do	2 0
21 Best Wooden Roller	2 10
2d do	1 5
22 Best Reaping Machine	5 0
2d do	3 0
3d do	2 0
23 Best Stump Extractor	2 0
2d do	1 0
3d do	0 10
24 Best Mowing Machine	5 0
2d do	3 0
3d do	2 0
25 Best Potato Digger	0 15
2d do	0 10
3d do	0 5
26 Best Thistle Extractor	0 10
2d do	0 5
27 Best Farm Gate	0 15
2d do	0 10
3d do	0 5
28 Best Cultivator	3 0
2d do	2 0
3d do	1 0
29 Best Machine for making Drain Tiles	2 10
2d do	1 10
30 Best Brick-making Machine	2 10
2d do	1 10

31 Best half-dozen Hay Rakes	0 10
2d do	0 7
3d do	0 5
32 Best half-dozen Manure Forks	0 15
2d do	0 10
3d do	0 5
23 Best half-dozen Hay Forks	0 15
2d do	0 10
3d do	0 5
34 Best half-dozen Scythe Snaiths	0 15
2d do	0 10
3d do	0 5
35 Best Ox Yoke and Bows	0 15
2d do	0 10
36 Best Grain Cradle	0 10
2d do	0 5
37 Best half-dozen Grain Shovels, wood	0 15
2d do	0 10
3d do	0 5
38 Best half-dozen Iron Shovels	0 15
2d do	0 10
3d do	0 5
39 Best half-dozen Spades	0 15
2d do	0 10
3d do	0 5

The names of Exhibitors and Prices of Implements to be inserted on the Cards.

CLASS P.—DOMESTIC MANUFACTURES

*Leather and Furs.*

1 Best Saddle and Bridle	£1 0
2d do	0 15
2 Best Side Saddle	1 0
2d do	0 15
3 Best specimen of Whips and Whip Thongs (collection assorted)	1 10
2d do	0 15
4 Best 3 Hogskins	1 0
2d do	0 10
5 Best set of Farm Harness	1 10
2d do	1 0
3d do	0 10
6 Best set of Pleasure Harness	1 10
2d do	1 0
3d do	0 10
7 Best Travelling Trunk	1 10
2d do	0 15
3d do	0 5
8 Best Side of Sole Leather	0 15
2d do	0 10
3d do	0 5
9 Best side of Upper Leather	0 15
2d do	0 10
3d do	0 5
10 Best Skirting Leather	0 15
2d do	0 10
3d do	0 5
11 Best side of Harness Leather	0 15
2d do	0 10
3d do	0 5
12 Best Calf Skin, Dressed	0 15
2d do	0 10
3d do	0 5
13 Best Skin of Leather for Carriage Covers	1 0
2d do	0 10
14 Best Fur Hat	0 15
2d do	0 10
3d do	0 5
15 Best Fur Cap	0 15
2d do	0 10
3d do	0 5
16 Best Fur Sleigh Robe	0 15
2d do	0 10
3d do	0 5

17 Best Specimen Bootmaker's Work	0 15
2d do	0 10
3d do	0 5

CLASS Q.—MANUFACTURES IN METALS, &c.

1 Best Portable Steam Engine. (open to foreign competition) Diploma and	£5 0
2 Best Model in metal of Engine, general millwright's work or machinery, Dip. and	2 0
2d do	1 0
3 Best specimen of Silversmith's work, Dip. and	2 0
4 " Do Ornamental Iron-work from the hammer, Diploma and	1 10
5 " Do Cast Ornamental Iron-work, Diploma and	1 10
6 " Do Coppersmith's work, Dip. and	1 0
7 " Do Locksmith's work, Dip. and	1 0
8 " Do Pumpmaker's work, Dip. and	1 0
9 Best Iron Fire-proof Vault Door (price considered) Dip. and	2 0
10 Best Iron Fire-proof Safe, (price considered) Dip. and	1 10
11 Best Refrigerator (price considered,) Dip. and	1 0
12 Best Hall Stove	1 0
2d do	0 10
3d do	0 5
13 Best Parlor Stove	1 0
2d do	0 10
3d do	0 5
14 Best Cooking Stove, with Furniture	1 10
2d do	1 0
3d do	0 10
15 Best system of Ventilating buildings, with model and description, and reducing the same to practical use, Diploma and	5 0
2d do	2 10
[The Judges on Stoves are especially requested to pay particular attention to the ventilation which may be secured by the stoves on Exhibition.]	
16 Best specimen of Iron Casting for Stoves and general Machinery, Diploma.	1 0
17 Best Balance Scales	0 15
2d do	0 5
3d do	0 5
18 Best Model Hot Air Apparatus	1 10
2d do	0 15
19 Best Steaming Apparatus for Feeding Stock	1 10
2d do	0 15
20 Best set of Cooper's Tools	0 15
2d do	0 10
21 Best set of Bench Planes	0 15
2d do	0 10
22 Best pair of Hames	0 10
2d do	0 5
23 Best Saddle tree	0 10
2d do	0 5
24 Best Weaver's Reeds	0 10
2d do	0 5
25 Best Augurs from $\frac{1}{2}$ to 2 inches	0 10
2d do	0 5
26 Best Earth Augur	0 10
5d do	0 5
27 Best specimen 20 lbs. Cut Nails	0 10
2d do	0 5
28 Best Blacksmith's Bellows	1 5
2d do	0 15
29 Best Rifle	0 15
2d do	0 10
30 Best half-dozen Narrow Axes	0 15
2d do	0 10
3d do	0 5



31 Best set of Horse Shoes	0 15	26 Best Spinning Wheel	0 10
2d do	0 10	2d do	0 5
3d do	0 5	27 Best dozen Wheel Heads	0 15
32 Best half-dozen Grass Scythes	0 15	2d do	0 10
2d do	0 10	28 Best Churn	0 15
3d do	0 5	2d do	0 10
33 Best half-dozen Cradle Scythes	0 15	29 Best 4 or 6 Pannelled Door	0 15
2d do	0 10	2d do	0 10
3d do	0 5	3d do	0 5
34 Best assortment of Edge Tools, Diploma &	5 0	30 Best Window Sash, 12 lights, hung in frame	0 15

## CLASS R.—CABINET WARE, CARRIAGES, &amp;c.

1 Best Side Board, Diploma and	£3 0
2d do	2 0
3d do	1 0
2 Best Veneers from Canadian Wood, Dip. &	1 0
2d do	0 15
3d do	0 10
3 Best specimen of Sawed Pire	0 10
4 do Black Walnut	0 10
5 do Oak	0 10
6 do Curled Maple	0 10

In planks not less than six feet long, twelve inches wide and two inches thick, one side plain [not varnished,] the other rough.

7 Best specimen of Graining Wood, Dip. &	1 10
2d do	1 0
3d do	0 10
8 Centre Table, Diploma and	1 0
2d do	0 15
3d do	0 10
9 Best Dining Table, Diploma and	1 0
2d do	0 15
3d do	0 10
10 Best Easy Arm Chair	0 15
2d do	0 10
3d do	0 5
11 Best Sofa, Diploma and	3 0
2d do	1 10
3d do	1 0
12 Best 6 Dining Room Chairs	1 10
2d do	1 0
3d do	0 15
13 Best Ottoman	1 0
2d do	0 15
3d do	0 10
14 Best Work Box	0 10
2d do	0 5
15 Best Writing Desk	0 10
2d do	0 5
16 Best 1 Horse Pleasure Carriage, Diploma &	2 0
2d do	1 10
3d do	0 15
17 Best 2 Horse Pleasure Carriage, Diploma &	2 0
2d do	1 10
3d do	1 0
18 Best half-dozen Corn Brooms	0 10
2d do	0 5
19 Best half-dozen Broom Handles, turned,	0 10
2d do	0 5
20 Best Specimen of Willow Ware	0 10
2d do	0 5
21 Best dozen flour barrels	1 0
2d do	0 10
22 Best Wooden Pail	0 5
2d do	£0 3 9
23 Best Wash Tub	0 7 6
2d do	0 5
24 Best Washing Machine	0 10
2d do	0 5
25 Best Board Rule	0 10
2d do	0 5

31 Best Model Beehive	0 10
2d do	0 5
32 Best bundle of Shingles, sawed,	0 10
2d do	0 5
33 Best do do split,	0 10
3d do	0 5

## CLASS S.—POTTERY.

1 Best specimen of Pottery	£1 0
2d do	0 15
3d do	0 10
2 Best specimen Draining Tile	2 10
2d do	1 5
3d do	0 10
3 Best dozen Bricks	0 10
2d do	0 5
4 Best Walter Filter	0 15
2d do	0 5

## CLASS T.—WOOLLEN AND FLAX GOODS.

1 Best piece of no less than 12 yards of Woollen Carpet	£2 0
2d do	1 0
3d do	0 10
2 Best 12 yards, or over, Oil Cloth,	1 0
2d do	0 10
3d do	0 5
3 Best pair Woollen Blankets	2 0
2d do	1 0
3d do	0 10
4 Best Counterpane,	1 0
2d do	0 15
3d do	0 10
5 Best piece 12 yards Flannel,	1 0
2d do	0 15
3d do	10
6 Best piece of Satinet, 12 yards	1 0
2d do	0 15
3d do	0 10
7 Best piece Broad Cloth, from Canadian wool	2 0
2d do	1 0
3d do	10
8 Best piece Flannel, 10 yards, not Factory made,	0 15
2d do	0 10
3d do	0 5
9 Best piece Winter Tweed, 12 yards,	1 0
2d do	0 15
3d do	0 10
10 Best piece Fulled Cloth, 10 yards, not factory made,	1 10
2d do	1 0
3d do	0 10
11 Best Shawls, not factory made,	1 10
2d do	1 0
3d do	0 10
12 Best piece Linen Goods	0 15
2d do	0 10
3d do	0 5
13 Best samples of Flax or Hemp Cordage, not less than 28lbs.	0 15
2d do	0 10
3d do	0 5

14 Best 12 Linen Bags, manufactured from Flax, growth of Canada,	1 0
2d do	0 15
3d do	0 10

CLASO U.—LADIES' DEPARTMENT.

1 Best specimen of Crochet Work	£1 0 0
2d do	15 0
3d do	10 0
2 Best specimen of Fancy Netting	15 0
2d do	10 0
3d do	7 6
3 Best specimen of Fancy Knitting	15 0
2d do	10 0
3d do	7 6
4 Best Embroidery, in Muslin,	15 0
2d do	10 0
3d do	7 6
5 Best Embroidery, in Silk,	15 0
2d do	10 0
3d do	7 6
6 Best Embroidery, in Worsted,	15 0
2d do	10 0
3d do	7 6
7 Best specimen of Worsted Work	15 0
2d do	10 0
3d do	7 6
8 Best specimen of Raised Worsted Work	15 0
2d do	10 0
3d do	7 6
9 Best specimen of Ornamental Needle Work	15 0
2d do	10 0
3d do	5 0
10 Best specimen of Quilts, in Crochet,	1 0 0
2d do	15 0
3d do	10 0
11 Ditto in Knitting	1 0 0
3d do	15 0
3d do	10 9
12 Ditto in Silk	1 0 0
2d do	15 0
3d do	10 0
13 Best Piece-Work Quilt	1 0 0
2d do	15 0
3d do	10 0
14 Best specimen in Tatting	15 0
2d do	10 0
3d do	7 6
15 Best specimen of Braiding	15 0
2d do	10 0
3d do	7 6
16 Best specimen of Wax Fruit,	15 0
2d do	10 0
3d do	5 0
17 Best specimen of Wax Flowers	15 0
2d do	10 0
3d do	5 0
18 Best Pair Woollen Socks	10 0
2d do	7 6
3d do	5 0
19 Best Pair Woollen Stockings	10 0
2d do	7 6
3d do	5 0
20 Best specimen of Gentlemen's shirts	15 0
2d do	10 0
3d do	5 0
21 Best Pair of Woollen Mittens	10 0
2d do	7 6
3d do	5 0
22 Best Pair of Woollen Gloves	10 0
2d do	7 6
3d do	5 0
23 Best Hat of Canadian Straw,	10 0
2d do	7 6
3d do	0 5

24 Best Bonnet of Canadian Straw	10 0
2d do	7 6
3d do	5 0

CLASS V—FINE ARTS, &C.

Oil.

	Professional List	Amateur List
1 Historical painting, Canadian subject, Diploma and 2d best	£3 0	£2 10
2 Landscape, Canadian subject, Diploma and 2d best	2 0	2 0
3 Animals [grouped or single] Diploma and 2d best	3 0	2 10
4 Portrait—Diploma and 2d best	2 10	1 10
	1 10	1 0
<i>In Water Colors.</i>		
5 Landscape, Canadian subject, Diploma and 2d best	2 10	2 0
6 Portrait, Diploma and 2d best	1 10	1 0
7 Animals, [grouped or single] Diploma and 2d best	2 0	1 10
8 Miniature, Diploma and 2d best	1 10	1 0
9 Flowers, Diploma and 2d best	1 10	1 0
	1 0	0 15

Pencil and Crayon.

10 Pencil Portrait, Diploma and 2d best	1 10	1 0
11 Crayon Portrait, Diploma and 2d best	1 0	0 15
12 Pencil Drawing, Diploma and 2d best	1 10	1 0
13 Crayon Drawing, Diploma and 2d best	1 0	0 15
14 Colored Crayon, Diploma and 2d best	1 10	1 0
	1 0	0 15
15 Best specimen of Colored Geometrical drawing of Engine or Millwright work. Diploma and		2 0
16 Daguerreotype, best collection, the Exhibitor to have operated in Canada for the last 12 months, Diploma and 2d best		1 10
17 Lithographic Drawing, Diploma and 2d best		1 0
18 Wood Engraving, Diploma and 2d best		1 10
19 Engraving on Copper, Diploma and 2d best		1 0
20 Engraving on Steel, Diploma and 2d best		1 10
21 Best specimen of Seal Engraving, Diploma and		1 0
22 Do do Carving in Wood, Diploma and		2 0
23 Do do do Stone, Diploma and		2 0
24 Do do Modelling in Plaster, Diploma and		2 0
25 Do do Ornamental Turning, Diploma and		1 0
26 Ornamental Writing, Diploma and 2d best		1 0
27 Stuffed Birds 2d best		0 10
28 Picture Frame, gilt 2d do		1 0
		0 10



29 Picture Frame, veneered	1 0
2d do	0 10
30 Stucco Moulding	1 0
2d do	0 10
31 Stained Glass	1 0
2d do	0 10
32 Dentistry, Diploma and	1 0
2d do	0 10

All articles exhibited by *Ladies* to be admitted *free*.

All articles entitled to premiums must have been executed since the last Exhibition of this Association.

#### CLASS W.—INDIAN PRIZES.

1 Best Bark Canoe	£1 10
2d do	0 10
2 Best 4 Paddles	0 15
2d do	0 5
3 Best Indian Cradle	0 15
2d do	0 0
4 Best pair of Snow Shoes, (common size)	0 15
2d do	0 10
5 Best pair of Snow Shoes, (8 inches long)	0 10
2d do	0 5
6 Best Tobacco Pouch worked with Porcupine Quills	0 5
7 Best pipe of Peace	0 15
2d do	0 10
8 Best Pipe of War	0 15
2d do	0 10
9 Best pair of Moccasins (plain)	0 5
2d do	0 3
10 Best pair Moccasins (worked with Porcupine Quills)	0 7
2d do	0 5
11 Best pair Moccasins (worked with Beads)	0 7
2d do	0 5
12 Best Fruit Basket	0 7
2d do	0 5
13 Best Clothes Basket	0 7
2d do	0 5
14 Best Hand Basket	0 7
2d do	0 5

All articles exhibited by Indians admitted free.

#### CLASS X.—BOOKBINDING, PAPER &C.

1 Best specimen Bookbinding	£1 0
2d do	0 15
3d do	0 10
2 Best ream of Writing Paper	1 0
2d do	0 15
3d do	0 10
3 Best ream of Printing Paper	1 0
2d do	0 15
3d do	0 10
4 Best specimen Letter-Press Printing, executed since last Exhibition	2 10
2d do	1 10
3d do	1 0

#### CLASS Y.—FOREIGN STOCK.

Premiums for Stock and Implements belonging to persons residing out of *Canada*. Exhibitors of this class are admitted *free* of any charge.

1 Best Durham Bull over 5 years, Diploma and	£2 10
2d do	2 10
2 Best Durham Cow, Diploma and	1 10
2d do	1 10
3 Best Ayrshire Bull, Diploma and	2 10
2d do	2 10

4 Best Ayrshire Cow, Diploma and	1 10
2d do	1 10
5 Best Hereford Bull, Diploma and	2 10
2d do	2 10
6 Best Hereford Cow, Diploma and	1 10
2d do	1 10
7 Best Devon Bull, Diploma and	2 10
2d do	2 10
8 Best Devon Cow, Diploma and	1 10
2d do	1 10
9 Best Stallion for Agricultural purposes, Diploma and	3 0
2d do	3 0
10 Best Blood Stallion, Diploma and	3 0
2d do	3 0
11 Best Leicester Ram, Diploma and	1 10
2d do	1 10
12 Best 2 Leicester Ewes, Diploma and	1 10
2d do	1 0
13 Best Southdown Ram, Diploma and	1 10
2d do	1 0
14 Best 2 Southdown Ewes, Diploma and	1 10
2d do	1 0
15 Best Merino and Saxon Ram, Diploma and	1 10
2d do	1 0
16 Best 2 Merino or Saxon Ewes, Diploma and	1 10
2d do	1 0
17 Best Boar	1 10
2d do	1 0
18 Best Breeding Sow, Diploma and	1 10
2d do	1 0

#### CLASS Z.—FOREIGN AGRICULTURAL IMPLEMENTS.

1 Best Plough, Diploma and	£1 0
2 " Subsoil Plough, Diploma and	1 0
3 " Pair Harrows	1 0
4 " Fanning Mill, Diploma and	1 0
5 " Horse Power Thrasher and Separator, Diploma and	2 10
6 " Seed Drill or Barrow, Diploma and	1 0
7 " Straw Cutter	1 0
8 " Smut Machine	1 0
9 " Portable Grist Mill, Diploma and	2 10
10 " Grain Cracker	1 10
11 " Machine for cutting Roots for Stock	1 0
12 " Corn and Cob Crusher	1 0
13 " Clover Machine, Diploma and	2 0
14 " Reaping Machine, Diploma and	2 10
15 " Cultivator, Diploma and	1 5
16 " Assortment of Agricultural Implements & Edge Tools, Diploma and	5 0

#### PREMIUMS FOR COUNTY REPORTS.

The Board of Agriculture will award a premium of the value of £15 for the best Report on the Agriculture of each of the following Counties, viz.: *Carleton, Welland, and Prince Edward*. If such report be written by the Secretary of the County Society, the premium will be increased to £20.

The Reports must be sent in to the Secretary of the Board of Agriculture, Toronto, accompanied by a sealed note containing the name and address of the writer, on or before the 1st of June, 1854.

#### SALE OF STOCK.

Parties attending the Exhibition having Stock to dispose of, can have entries made of the same in the Books of the Society, free of charge, by applying at the Secretary's Office, where those desirous of becoming purchasers can inspect the list.

## Communications.

### ON THE MODERN SYSTEM OF DRAINAGE, AND ITS APPLICATION IN CANADA.

#### No. III.

If we may judge by the discussions and resolutions at several of the Farmers' Clubs throughout the Province, the question is not whether it would be profitable to drain,—for *that* is admitted by common consent,—but rather, how means are to be found for the operation. Now, the promoters of drainage extension in England had to contend with precisely the same apparent difficulty; and hence, in their advocacy of an improved system, they early found it desirable to recommend it as a secure and remunerative object for the application of collective capital, and so to enlist in the cause the commercial sympathies, and co-operation of the monied classes. The eminent success which has attended the establishment of Public Companies for the drainage and improvement of land, has already been alluded to; and since, with such an example before them, it may reasonably be expected that the good people of Canada will go and do likewise, we shall give a brief outline of the powers which have been conferred by the Imperial Parliament on "*The General Land Drainage and Improvement Company*," and their mode of conducting business.

The Company was incorporated in 1849 by an Act which, in its progress through Parliament, received the careful consideration of the Drainage Commissioners, the Board of Trade, and a Committee of the House of Lords. It supplies the defects of all former enactments in matters of detail, and by an inexpensive and simple process enables the owners of a limited and an exclusive interest in land to carry out every kind of permanent improvement thereon, either by the application of their own, or the Company's funds; and to secure the same by a charge upon the inheritance. The powers comprise the execution of all works of Drainage, (including the making of outfalls through adjoining properties, if needful), Irrigation, Reclamation, Inclosure, Road-making, &c.; the erection of Farm Homesteads, Tileries, and other buildings necessary for good farming; and they have also the power to undertake sewerage, and all other sanitary works, under contract with corporation and town authorities. They can also purchase lands that are capable of being improved, improve them by the necessary means, and resell them. In conducting their business, which has become very extensive, the Company, on request, supply the landowner with a blank form of application wherein to particularise the lands, and the nature of the works to be performed. If the application is entertained, an inspection and survey of the property is made by the Company's Engineer, and a plan and estimate of the contemplated improvement is prepared by him for the guidance of the Company, and for the approval and acceptance of the owner of the land. This agreed upon, the proprietor enters into a contract with the Company to execute the

work, in accordance with the plans, in an effectual and durable manner, for a fixed sum. On the completion of the work, the total amount of its cost, along with any reasonable sum for preliminary and incidental expenses, is made a mortgage charge to the Company on the land improved, for a prescribed number of years, with such an agreed annual payment as will redeem the principal and interest in the period. In the case of homestead, and other erections, the maximum term over which the repayment of the outlay can be spread in 31 years; and in the case of Drainage, and other works of a like nature, it can be extended over as far as fifty years. Of course in either case the owner has the option of making the period for repayment as short as he pleases. As evidencing the soundness of the principles upon which this Company is based, as well as the beneficial and profitable character of their operations, it might be sufficient simply to refer to the high standing of the parties composing the Board of Directors; but when we see amongst them the names of two of the most eminently practical and extensive contractors of the present day—Wm. Cubitt, Esq., and Samuel M. Peto, Esq., M. P.—we cannot hesitate to give a ready assent to the usefulness and advantages of such a Company.

Now, what is there in this that the enterprise of Canada cannot emulate? The benefits derived from the application of Joint Stock Capital are as fully recognised in this Province, in all other operations, as they are in the mother country: Banks, Canals, Railways, Insurance. And even industrial establishments, are successfully conducted with collective means; surely, then, the cultivators of the soil might hope for the same success. Indeed, in our judgment, the condition and circumstances of the country are such as to ensure, to a well conducted Company, a highly remunerative return; and to the land owners, such a reliable source for means and efficient workmanship as they can hardly hope to secure in any other way.

In seeking from the Provincial Legislature a special Act of Incorporation, it would be necessary, not only to provide for what may be regarded as ordinary operations of land improvement, such as Drainage, Irrigation, Fencing, Building, &c., but powers must be given, as in the English Act, to use, improve, and cut outfalls through adjoining lands, under suitable regulation; to fell and clear land of timber, and to make roads. And on this latter head we would suggest whether it might not be advantageous to the country generally to give such a Company powers to make, maintain, and receive tolls from all such public roads as they might be called upon to construct. We would also have conferred upon them powers to contract with City and Town authorities for the execution of sewerage, water, and other sanitary works; and also the power to purchase, reclaim, hold, and sell land. And, further, that under fitting limitations, they should have the power of issuing Notes or Debentures, bearing interest, and payable at such periods as should correspond with the periods of repayment over which the several Mortgage charges for com-



pleted works extended. These Debentures would, we apprehend, meet with public confidence, from the fact of being founded on a Mortgage landed security, which was every year increasing in value.

The great proportion of emigrants to this country turn their attention exclusively to the acquirement of land, and its cultivation; and yet the majority of these are usually not in a condition to command more funds than will barely suffice for ordinary wants. Would it not, then, be infinitely to their advantage if they could avail themselves of the powers and facilities of such a company, and have their locations at once cleared, fenced, drained, and roaded—with a suitable house and homestead—ready for profitable cultivation, instead of wasting half their life time and energies in the clearing of a comparatively small plot of ground, and the building of a miserable shanty-dwelling, and a still worse steading?—Depend upon it, there are very few who would not willingly pay an annual charge of even 20s. per acre, and upwards, for a few years, and cultivate their full extent of cleared and otherwise properly conditioned land, than contend, and that often single-handed, with the enduring and hopeless-looking task of preparing primeval forest for the plough.

As respects the sources, and extent of profit which might accrue to a Company engaged in such operations, it need hardly be remarked that they would not only be able to command the most effective and competent staff of officers; but that their power to provide, in the most perfect forms, all the mechanical appliances of the day,—such as portable engines, saw mills, tile machines, &c., &c.,—would at once place them in a position to execute their contracts effectively and advantageously.

Before discussing this portion of our subject it may not be uninteresting, and perhaps not unprofitable, to record one incident, amongst many, which occurred to the writer some years ago in reference to the matter in hand; and which exhibits forcibly the conviction which a good cause silently works on the minds of those who, from one reason or other, may be either lukewarm or absolute opponents. In prosecuting the first attempt which was made in England to establish a Drainage Company, the writer applied amongst other influential parties, to the present Lord Wharncliffe [then the Hon. John Stewart Wortley, and one of the Members for the West Riding of Yorkshire] for his patronage and support, to which he replied by saying, he “had no direct interest in land; that he did not understand the full nature of the proposed undertaking, and consequently that he must decline giving any countenance to it.” This refusal was so unexpected, and, as we conceived, so unwarranted, that we could not refrain from repeating the request, and pointing out the fallacies by which the refusal was supported. No effect, however, was produced; and Mr. Wortley adhered to his refusal. Two years afterwards came the repeal of the Corn Laws, and the passing of the first general Drainage Act, with a grant of two millions sterling of the public money for the Drainage of Estates. Meanwhile

his father died, and Mr. Wortley came to the title; and amongst the earliest applicants for an advance of £10,000 for the drainage of his estate was the present Lord Wharncliffe. The writer too had moved a step by being appointed one of the Assistant Commissioners under this first Drainage Act, and was in consequence sent by the Commissioners to make the preliminary inspection of the property, and report upon his Lordship's application for an advance. Of course, in the interviews that ensued all allusion to his former refusal to countenance the very effort which had been instrumental in placing within his reach the means of improving an extensive estate, that otherwise, must have remained comparatively worthless, was scrupulously avoided, although we dare not affirm that the altered circumstances were not lost on either party. Since then Lord Wharncliffe has written a somewhat elaborate article on Drainage, in the Journal of the Royal Agricultural Society of England.—“*Sic transit gloria mundi.*”

It is not within the scope of our design to tax the patience of the reader by entering into any prolix disquisition on those details in the execution of Drainage which come more especially within the province of the experienced professional Drainer; for, independently of some regard to self-interest, we have very good reason to know, from numberless examples of failures, that “every man his own Doctor” in Drainage is not only the most inefficient, but generally the most costly course that can be pursued. There are, however, some leading features with respect to materials, depth, distance, outfalls, and effects to be attained, of which we purpose to treat in the next article; and which will conclude the present series.

*To be continued.*

#### ON THE EDUCATION OF FEMALES—No. IV.

*To the Editor of the Agriculturist:*

School education should not be allowed to clash with the claims of justice and honesty. This brings me to speak of that system of school education, *miscalled* free schools, *properly* called pauper schools, which some officials are very anxious to establish by a law of the Province, to which they wish to make every man to bow, and every man to pay whether he has any children to educate or not, or whether he approves of the education therein given or not. And as your paper is designed for the benefit of the farmers, in which they may state their grievances and advocate their interests, I hope it will not be considered inconsistent with these views, to allow me to say, that I think the free school system [so-called] is calculated to affect unfairly, our profession. We heartily concede in the first place, that the children of poor widows, or orphans who have lost both parents, and the children of such as are unavoidably poor, should be furnished with such education as their circumstances and prospects require; but we do sincerely think, that *nothing can* exceed the injustice of

compelling one man to pay another man's debts when that man is abundantly able to pay his own debts. We are told that it is very just, "that the property of all should be taxed for the education of all." If this be true, it is certainly equally just and more important that the property of all should be taxed to feed the whole, and to clothe the whole, and to provide religious instruction for all, for food, and raiment, and religion are more necessary than school education; and thus abolish all distinctions of property and right. Some persons seem to think that it is a sufficient justification of this measure, to tell us that the same plan is pursued in many of the American States.

Alas, for such an argument! Everything, good, bad, and indifferent, may be justified in the same way; for what can a person think of that is not practised in the States? Even that "sum of all villainies," that compound of injustice, cruelty, and tyranny called slavery, may be justified by the same rule. It is said, again, by way of justifying this measure, that parents cannot be induced to give their children a suitable education, unless the public will pay the expense. There is but little truth in such a statement. But supposing it true; if a man do not love his own children well enough to give them a suitable education, how can he expect that people on whom they have no just claim, will be willing to give them that education which he is well able to give, but which he is too stingy to afford. If a man were too stingy to afford his children food, or raiment, the law would soon find a way to compel him, and every man who is able ought to be compelled to educate his own children. But we are told that more children attend School when the public are obliged to pay the expense. This is, no doubt, true, but it is doing evil that good may come. One great objection against this system is that the greatest part of the expense falls, and must fall, on the farmer, for whatever laws may be made to equalize taxation they will be, to a great extent, inefficient, because all classes except the farmer, *can*, and *do*, and *will*, conceal the amount of their property from the assessor. As the law now stands, a number of Mechanics and others get together at the annual school meeting and vote for what they call a free school, and the farmers have to foot up the bill; and yet these very mechanics will charge a farmer 12 y<sup>ork</sup> shillings to three dollars per day, when they are scarcely willing to allow a farmer who works for them six y<sup>ork</sup> shilling a day. Notwithstanding all this difference in wages between the farmer and mechanic, if the farmer does not wish to educate his own children and theirs too, he is said to be stingy or factions, or indifferent to education. Although the farmer is expected to be willing to pay his own debts, and the debts of other people in regard to schools, he is not able to send his children to school with the same ease that others can; partly, because he wants his children to help him during summer, and partly because many of them live remote from the school house. Will you allow me here to say, that farmers, particularly back-

division of the public school fund? For a while after that fund was first created, its proceeds were divided among the several school sections, according to the number of children of school age in each section. This was a fair rule of division, too fair it seems to last long, and another rule *very unfair* for the farmer and the backwoodsman, was substituted in its place; namely, to divide the public money among the different school sections, according to the average number of children that actually attend school, and that average to be taken for the whole year, so that if in any school section they are able to keep up school only for six months, and the average for that six months be thirty scholars, by taking the average for the whole year, the number will be reduced to fifteen scholars, and the public money also reduced one half. Now this is extremely unfair toward the backwoodsman, who needs help more than any man, and certainly deserves it as much as any man, for there is not a more useful class of men in the entire province. Persons in scattered settlements find it difficult to keep up school six months in the year, partly, because there are but few children, partly, because their parents are poor, and partly because qualified teachers cannot be got. Scattered settlements have to exert themselves *much more* to keep up school six months in the year, than others more favourably situated do to keep it up all the year, and yet, while they have to pay their full proportion of school tax, they are to receive by this new arrangement, almost nothing, while almost all the public money goes to cities, towns, and villages, and other popular places where it is not so much needed.

Fifth: School education should be so conducted as to cultivate the moral and religious sentiments in conjunction with the mental faculties. It seems to be taken for granted by certain writers, that education and good morals are so linked together, that where the former is found, the latter will follow as a matter of course. Right glad should we be if this were the case, but we are sorry to say, that we believe, that there is no ground whatever on which to rest such an assumption. The immoralities of educated society are different in kind, from those of the uneducated, but they are not less offensive to God, or destructive to man on that account. That species of deliberate and wilful murder, called duelling, is almost entirely confined to the educated classes of society, so also, are forgeries and gambling; and then, how often do we read in the public prints of bankers' clerks, of merchants' clerks, and persons employed in the collection of Township, County, and State taxes, who have absconded with thousands of pounds of other men's money, while neither the educated nor uneducated can claim exemption from the degrading vice of drunkenness. To the uneducated, generally, belong petty thefts, and other low vices too numerous to mention. It is not the design of these remarks to undervalue mental cultivation, or what is sometimes called secular education, but to show that of itself it is not sufficient. Mere mental cultivation, or secular learning can never, of itself secure correct



moral deportment. We might as reasonably expect to "gather grapes of thorns, or figs of thistles;" and that education is lamentably deficient, is limited, partial and unfinished, that begins and ends with the cultivation of our mental faculties. Education, to be thorough and efficient, should have respect to our entire existence, both with regard to time and eternity. It should be the training up of a child in the way it should go. It should embrace, not only what he ought to know, but what he ought to do. It should be so conducted as to invigorate his physical energies, to develop his mental powers, to restrain his wayward passions and to direct and strengthen his moral and religious sentiments to a useful, holy life. In cultivating the moral sentiments it is not necessary that the pupil should wade through ponderous volumes of ethical philosophy, grounded on the reason and fitness of things. These, doubtless, have their use, and may be read with advantage if there is time, and may regulate human conduct in the stillness of the closet, where temptation has not power to operate, and where there is time to weigh all the reasons for and against every action, but when brought in close conflict with the prejudices, passions, and temptations of human life, they will be found nearly powerless. The pupil should be carefully instructed till an intelligent and durable conviction be produced in the great truths of revelation, such as the Being, Omnipotence, Omnipresence, and Omniscience of God, with the certainty that "God will bring every work into judgment, with every secret thing, whether it be good or whether it be evil." In connection with these truths, bring before the pupil our Saviour's short, but comprehensive rule of moral conduct; "Whatsoever ye would that men should do to you, do you even so to them." These considerations will have more efficacy in the production of correct moral deportment than all the treatises on moral philosophy, that ever were or can be written, because they include the power of law and the authority of a lawgiver, of which mere moral philosophy is destitute.

#### AN OLD FARMER.

Yarmouth, March 29th, 1854.

#### MELONS AND CUCUMBERS.

Melons and Cucumbers require similar treatment. The best way on all heavy soils is to dig out holes about 18 or 20 inches deep and wide. Fill these holes about two-thirds their depth with fresh manure, finishing with light or sandy soil, made rich by a mixture with well rotted manure and fine garden mould. The hills should be raised about six inches above the surface, and be six feet apart. Plant the seeds on these mounds; and as soon as they are large enough to be out of the way of insects, thin out to four in a hill.—Buist recommends that when the plants have made four or five rough leaves, the points of each shoot should be pinched off, as it will make them branch out and fruit earlier.

## Editorial, &c.

### HINTS FOR THE MONTH.

Nearly all field crops will, or at least should be in the ground before the close of May, but some of the root or drilled crops may still be sown with success, if the ground be well tilled and the season favourable. Potatoes frequently succeed well, planted in the first week in June, although more liable to be affected by the rot than if planted some weeks earlier. The earlier ripening varieties of Indian Corn may also succeed sown at the same time, if on rich well prepared ground, and the crop be frequently and carefully hoed afterwards. For carrots, parsnips, and mangel wurzel the season is rather late, but if circumstances have prevented the getting them in sooner, they may still be risked upon a small scale. To ensure the germination of mangel wurzel seed, it should be soaked in warm water for several days, or until it sprouts before planting. For Swedish Turnips, from the 1st to the 10th June, when the weather is warm, and genial, is perhaps as favorable a season as any. The success of this crop depends upon its making a vigorous growth from the very first. If checked at the beginning it does not so easily recover afterwards. There is frequently found to be less danger from the fly, when turnips are sown after the first week in June, than if sown earlier. As a specific against this insect, soaking the seed in whale oil 24 hours before sowing, and then drying it in plaster or dry sand for convenience of handling, has been tried with success. The quantity of seed sown to the acre should be about two pounds, though much less would be sufficient, if it all vegetated and escaped injury. But it is better to sow it so thick that a good number of plants will have a chance of getting into the rough leaf and out of danger, before the fly can destroy the whole. If the ground be in good condition, and of sufficient moisture for the seed to germinate at once, the plants will soon be beyond the destructive powers of the fly. The seed may be sown either in drills or broadcast, and covered not over one or two inches deep, with fine mould. White Turnips may be sown considerably later, even as late as the middle of July, on rich well

tilled land, and do well. The cultivation of root crops will be found alluded to at considerable length in the Report of the Guelph Farmers' Club, in another part of this number.

Weeds, unfortunately, grow as rapidly, sometimes more rapidly in June and July, than useful plants, so unless they be kept down by vigorous and frequent hoeing or ploughing, the labor and expense of sowing potatoes, corn, turnips, &c., will be little better than so much labor thrown away. Besides, the practice of frequently stirring the ground, even in the absence of weeds, is of the greatest advantage in aiding the growth of the crops. Turnips &c., must also be judiciously thinned, or they will be little better than if overgrown with weeds. Turnips and mangel-wurzel, if in drills, may be thinned from twelve to eighteen inches apart in the drills, if broadcast about eighteen inches, as near as may be, each way; carrots and parsnips if in drills 15 or 18 inches apart, may be thinned to about 9 inches apart in the drills.

Besides such work as above mentioned, and the repairing of fences and buildings, road making, draining operations, &c., the principal business of June, will be the preparation of the fallow for wheat sowing in September. And on the manner in which this is done will greatly depend the results to be obtained next year. The present high price of grain, in connection with passing political events in Europe, will probably lead to the preparation of a larger breadth of land than heretofore in Upper Canada to be sown with wheat in Autumn. If the first ploughing has to be performed in June, unless the weather be favorable, it will, on clay land, be hard work for both man and horse. If the first ploughing has been given in Autumn or Spring, the second in June will not be so laborious, and the farmer will find it to his advantage to keep his ploughshare sharp, and turn up a furrow to the air at least six or seven inches in depth. If the manure is to be laid on at this ploughing, it should not be left long evaporating in the field, but ploughed in as soon as possible after being drawn out from the yard. Experience has amply tested that Canada thistles, that disgrace and bane to so many neighborhoods in this country

may be effectually eradicated, by a thoroughly and cleanly cultivated summer fallow, so that no farmer has occasion to despair of getting rid of this pest, if he will only apply himself heartily to the task.

Attention to all the above matters, and a few others which might be mentioned, will probably conduct us to the end of June, or beginning of July, when the hay crop, and soon after wheat and barley, will demand our attention, and there will be abundant opportunity for testing the good qualities of the mowing and reaping machines mentioned in another place.

#### PREMIUMS FOR FARMS AND GARDENS IN THE COUNTY OF RUSSELL.

We have received the following communications from C. P. Treadwell, Esq., President of the Provincial Agricultural Association, on the subject of premiums for the best cultivated Farms and Gardens in the County of Russell. The Board of Agriculture, at its recent meeting, expressed its approval of the plan, and it is much to be desired that a similar movement should be made either by Societies or influential and patriotic individuals in each of our settled Counties. The encouragement of the cultivation of the various kinds of garden crops is of no small importance, and would tend, in connection with the culture of flowers to improve the taste and increase the comforts of many a household. We trust that, as the object is a good one, and most creditable to the projector, it will not be lost sight of in other quarters, but that many will be induced through the force of this example to go and do likewise.

Mr. Treadwell proposes to give the sum of £25 for the purpose, viz.,—£5 to each of the four Township Societies of the County for the best cultivated farm in each locality; and likewise, \$5 for the best managed garden within the jurisdiction of each of the four Societies. As the great object of these premiums is the encouragement of farmers and their families in those important arts on which the existence and happiness of nations so essentially depend, we again express our best wishes for the success of the principle in this particular application.



L'Original, April 13, 1854.

DEAR SIR,—I have great pleasure in enclosing for your insertion in the *Agriculturist* a letter recently received from the Rev. Andrew Bell, a scientific and practical gardener, to whom I mentioned the circumstance of my offering premiums on farms and gardens in our county.

This opinion should be adopted in preference to mine, as I neither claim practical nor theoretical knowledge; but I feel an anxious desire to advance that branch of domestic economy throughout the Province, and especially in our own county.

I am, my dear Sir,

Your most obt. servt.,

C. P. TREADWELL.

Geo. Buckland, Esq.,  
&c., &c., &c.,  
Toronto.

L'Original, April 13, 1854.

MY DEAR MR. TREADWELL—When you called on me to-day, you mentioned a proposal which had been made to offer premiums for the best gardens in Townships or Counties, and wished me to give you some suggestions, in writing, as to the conditions on which those prizes should be awarded. Having my mind occupied and perplexed about some other matters, I really cannot give the matter that consideration I could wish. I shall try, however, to throw out two or three hints.

I think the quantity of land you propose as a minimum in order to get a prize—being nearly half an acre—is entirely too much. Very few families in the whole country, even amongst the wealthy, have that amount enclosed and under cultivation as a garden; and, moreover, no family could do such an amount of land that justice, and give it that high cultivation, which a garden requires, except among the wealthy, who are able to keep professional gardeners, and if I understand you aright, that is not exactly the class you wish to encourage and induce to cultivate gardens. I think that about the fifth of an acre, two square chains, would be enough; and further, I think this might be left indefinite. It might very safely be included under the head shortly to be mentioned.

If I mistake not, you also spoke of the greater variety of crops—another condition. I scarcely think that would answer the end in view. It might be no difficult matter to procure such a variety of seeds and roots that a garden might present a most wonderful display in this respect: a *little* of this and a *little* of that, to the extent of a hundred or more varieties, but I am afraid that the comfort of a family would be *very little* promoted thereby. The great thing that ought to be aimed at, in my estimation, is, to encourage every family in the land to cultivate a garden of *such extent as may be managed by themselves*, or with as little hired labour as possible merely for the rougher and more laborious operations,—a *useful and tasteful* garden, one that would yield both *profit and pleasure* to a family, instead of being a piece of expensive and useless ostentation. To come up to my idea of the thing, the garden should contain *such kinds of vegetables—*

*in such quantity—in such variety*, and of such *excellence and perfection*, and accompanied by *such taste*, in the laying out and the ornamentation of it with flowers, as would not only contribute to the *support of a family*, but, all things considered, would, in the estimation of the judges, as sensible and discreet men, minister the most to the health, the comfort, the enjoyment and the pleasure of a family, all the year round.

Another ground of awarding the prize might be the superior excellence of the garden produce of whatever kind—large, healthy, thriving, &c., &c., as indicating the best cultivation, and giving promise of the largest amount of produce for the least extent of ground.

Other grounds might be the care bestowed on the garden, the order and neatness in which it was kept, its entire freedom from weeds &c., &c.

And last but not least the *taste* displayed in laying out a garden, arranging the crops and ornamenting the garden with flowers. To bring the whole to a point: I would advise leaving out the extent of the garden. That I think might be safely included among the "*All things considered*" which must still be left to the discretion of the judges.

The prize might go to the garden which—I. Contained *such kind of vegetables in such quantity*—and in *such variety*, and of such *excellence* as would minister the most towards the *support, the health, the comfort, the enjoyment* and the pleasure of a family *all the year round*, and which, II. Contained the *best crops of their kind*, and III. Showed the *greatest freedom from weeds*, the greatest care and neatness,—and IV. displayed the greatest amount of *good taste* in laying out and the ornamenting of it with flowers.

I hold that the cultivation of a pure, refined, elevated taste in a family circle by the floral decoration of their garden done by themselves, and studied and watched by them, is an element and by no means the smallest one in the usefulness of the garden.

And now having made such suggestions as occur to me at the moment, in regard to what should constitute the best garden, to which a prize is to be awarded, I would make another suggestion, that something more is needed, than offering a trifling prize of a few dollars for the best garden, in order to induce a larger number of the people to cultivate such gardens as will conduce substantially to the support, health, comfort, &c., of their families. Their ignorance and their prejudices must be removed in regard to the usefulness of it, and the time, labour, and expense necessary. They must be instructed in short as to how it is to be done, and done to the best advantage.

Offer then a good prize, as large as any that have been offered for other essays, for a good essay on gardening. I do not mean a mere mechanical thing, such as is printed on seed papers and in almanacs to guide a novice, as to the breadth of drills and the times of sowing; but a deeper and more philosophical thing, showing in what a good garden consists and how it may be formed, the extent of it, how it should lie, the kind of soil, how deep, how drained, how enclosed—

ed, how laid out, how arranged, how manured, how cultivated, the different kinds of crops, the quantity and proportion of each, the rotation, and in these days of science, it should have a smack of Agricultural Chemistry, the science of fitting the elements of the soil to the requirements of the crop. If such an essay were what I think it should be, it would be almost every word of it just as applicable to Agriculture on a large scale by the farmer as to Agriculture on a small scale by the gardener.

Yours truly,

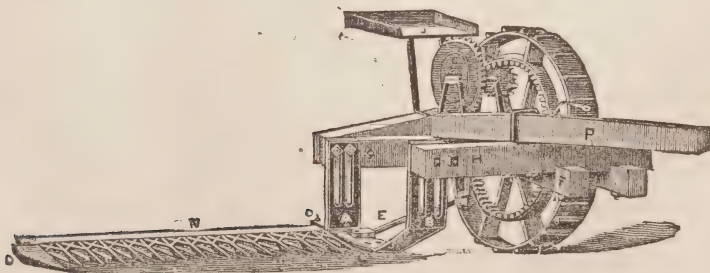
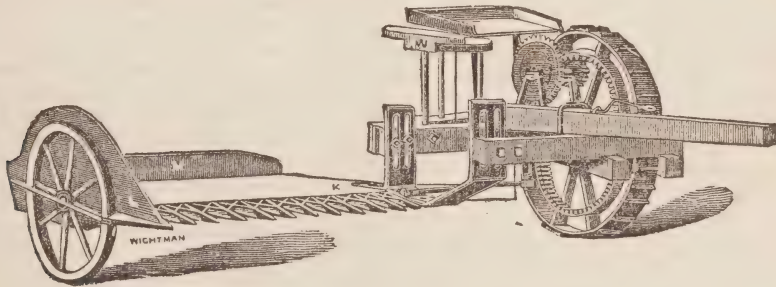
(Signed) ANDREW BELL.

C. P. Treadwell, Esq.

#### REAPING AND MOWING MACHINE.

As the season for grass cutting is near at hand, and as laborers are unusually scarce, and wages high, the farmer is obliged to look about him for such helps and substitutes as may be available. We consider it part of our duty to examine and point out to our readers such new improvements in agricultural machinery as may fall under our notice, especially where they promise a great saving of time and expense in the important operations of the farm. The Reaper has become "a great fact," in England as well as in America. Whenever the ground is sufficiently

level, and the crop in an upright condition, the Reaper is undoubtedly a labour-saving machine. The "Mower" is perhaps not so generally known, but in our opinion, in its present improved form, it is quite as important to the farmer, who needs its assistance, as its more famous relative.—Several attempts have been made to combine these machines, or in other words, to make a machine that would both reap and mow. Until last year these attempts, so far as we can learn, have not been very successful. The difficulty in the United States was increased by conflicting patents, the inventors of one improvement not being allowed to avail themselves of those of their neighbors. A Company at Buffalo has now, it appears, by purchase or agreement, combined these improvements in such a way, as to make a machine for \$130, which, they allege, is equal to Hussey's machine as a Reaper, and Ketchum's as a Mower. We have seen this machine, and so far as an inspection enables us to judge of its merits, we are disposed to regard it favorably. We hope soon to witness its performance in the field, when we shall be able to speak more confidently. Below are cuts of the machine, showing its appearance as a Reaper, and as a Mower :



FORBUSH'S IMPROVED REAPING AND MOWING MACHINE.

We subjoin the following extract from the Company's Circular :

"The Company have the most satisfactory

estimonials, that it will accomplish all that is claimed for it, and are satisfied after a thorough investigation of the relative merits of the different Mowing and Reaping Machines, now before



the public, that *the above is the best in the world!*

Every Machine sold, will be *warranted* to be made in a *workmanlike* manner, and of the *best* materials, and capable of cutting from ten to fifteen acres of grass or grain per day, with one span of horses and driver, and in all respects to do the work as well and as easy for the horse, as any other Machine in the country. The following particulars may be mentioned as points of *superiority*:

1. The Machine is compact, simple, durable, conveniently arranged, and easily managed.

2. The bolts are all accessible, and in sight of the driver when on his seat.

3. There is *no side draft*, and the horses can work all day on the machine, as easily as they can plow.

4. The grass is spread evenly over the ground.

5. The Raker's seat is so arranged that the grain may be raked off at the side, away from the track of the wheel, or in the rear as may be preferred.

6. The platform to receive the grain is so constructed, that it requires but a few moments to attach or detach it from the machine, and when on, it is perfectly substantial.

7. The platform, finger-bar and knives may be raised or lowered, and secured at any point, so as to cut the grass at any height desired.

8. The clamp which holds the finger-bar is so constructed that no bolts are required to pass through the finger-bar and so that the same connecting rod, finger-bar and knives are used, for grain and grass.

9. The guard-fingers are so constructed that they mutually brace and support each other, and effectually prevent the knives from choking or clogging in any kind of grass.

10. The machine is not likely to get out of repair, but if a guard or knife should break, another can be put on in the field without going to a machine shop.

## Literary and Miscellaneous.

### FAMILIAR CHEMISTRY.

BY MRS. M. F. H. THOMAS.

#### CHAPTER III.

The Earths proper, consist of the *rust* of *metals*; or the union of Oxygen and metals, and are called Oxides. They are clay—oxide of Aluminum; sand—oxide of Silicium; lime—oxide of Calcium; and magnesia—oxide of Magnesium. They are mingled with a large proportion of organic matter—the decayed remains of vegetables and animals. These last constitute the real fertility of the soil. They furnish the Ammonia, and the greater part of the Phosphate of lime; which, with gases from the atmosphere, form the pabulum of vegetable life, and enter so largely into organic structures. The other com-

ponent parts of the soil, furnish merely a mechanical support; a convenient medium for the transmission of nourishment; or at most, contribute very slightly to their sustenance. The experiment of growing an oak in a quantity of earth, (which had been previously weighed) contained in a vessel; showed, that in a number of years, it lost no appreciable bulk or weight, though the tree attained considerable size. The soil, in this case, consisted, probably, for the most part, of the earths proper; and the plant must have been nourished by the atmosphere, and organic remains contained in the water. If, however, a plant in the same circumstances, be watered with distilled water, it will droop and die. A proper admixture of the coarser materials of the pure earth, with the finely divided organic matter, is necessary to regulate the moisture of the soil; which depends, chiefly, upon its capillary attraction. By capillary attraction is meant the force which raises fluids above their level, in minute tubes and porous bodies. Pour water upon a piece of loose sandstone; or a heap of fine sand, and instead of passing directly through, it will remain suspended in its substance, until the whole is saturated. Water poured into the saucer of a flower jar, also, will rise, and moisten every part of the contained earth. It is by this law of capillary attraction, that soils retain their moisture. The rain which falls upon the surface, instead of sinking directly through, is retained in the interstices of the soil, more or less, according to its attractive capabilities; the surplus sinking down, until meeting a stratum of rock, or impenetrable clay, it forms little subterranean rivulets, which uniting, form larger streams, called veins; which bursting out on lower grounds, constitute our springs. Now upon the strength of the capillary attraction of the soil, which depends upon the number and size of its pores, (if too large, the attraction is weakened, hence coarse sand suffers more from drought, than fine,) depends the water-retaining capability of the soil; also its power of attracting moisture from the atmosphere. The vapors held by heat in the higher regions of the atmosphere, during the day, at night, condensed by cold, sink down, (hence the dampness of night air) to the stratum next the earth; which, if thirsty or dry, sucks it in, in proportion to its attractive power. Hence the difference which can be observed, in times of drought, between two fields, equally exposed to wind and heat.

Water in its natural state, is always mingled more or less, with foreign ingredients. Expose a glass of the purest spring water, to heat and light; and, in a short time, a green film will be observed to cover the surface. This film has been proved to be a real vegetation; and as no organized structure can originate without a germ, it must be the offspring of organic remains in the water. This is proved by the fact, that on distilled water similarly exposed, no such phenomenon occurs. Rain water is the purest of natural waters; as it contains no saline, or earthy ingredients. Evaporation and distillation, are analogous processes. Place, for instance, a shallow dish of brine; or any saline solution, in

the heat and wind. In a short time the water will disappear, leaving the salt crystalized upon the dish. In the same manner, the great mass of water, which falls in the form of rain, hail and snow, is raised from the briny ocean, to fall purified and refreshing; not only to water the thirsty earth, but to form a wholesome drink for man. Wonderful are the works and ways of the God of nature. Hard waters are those which contain earthy matters, in a state of solution; usually Phosphate, or Bicarbonate of lime dissolved by the passage of the water through the earth. Springs of soft water are, therefore, seldom found in lime-stone districts. Hard water is easily detected, by its curdling when mixed with soap, instead of forming a suds. This is also a chemical process. Soap is a chemical composition of oil and water, through the neutralizing influence of an alkali; which unites with both. Now waters called hard, in addition to a neutral salt, contain a quantity of surplus acid, by which the salt is held in solution, and the alkali of the soap having a stronger affinity for the acid than the oil and water, deserts its old union, to form a new one with the acid, leaving the oil to rise to the surface. When hard water is boiled, the surplus acid is expelled, causing a deposition of the carbonate of lime, (which is insoluble in water,) in scales on the kettle. Soft water is by many, considered insipid; but that this depends upon an artificial taste, created by stimulating foods and drinks, is proved by the fact, that animals prefer drinking from turbid pools of soft; rather than the most transparent hard water. All water which contains any important admixture of substances, not adapted to nourish the body; whether the much vaunted mineral waters, or the miasma-breathing marsh, is injurious; and their common use as a beverage, is the cause of many chronic and epidemic diseases; such as dysenteries, which are often caused by Phosphate of lime—Intermittent, and Remittent fevers—calcareous concretions in the intestines, &c., &c.

But here, as in every thing else, *FASHION* reigns omnipotent. Waters mingled with impurities of every description; *Iron—earthy salts—deadly Iodine and Bromine*; and last, and worst, that most disgusting and fatal of all gases, *Sulphuretted Hydrogen*; a few bubbles of which, when evolved by decaying animal remains, confessedly breeds pestilence and death, are transformed by this most potent magician, to unfailing panaceas for all complaints, from the gouty toe of the *gourmande* to the overtasked brain of the student; while the pure fluid, which God distills from Heaven, like holy manna of old, is cast aside, as fit only to cleanse the impurities of the external man; *for which purpose their favorite beverages answer very poorly*. Did it never occur to such people, that the internal surface of the body; which is but a continuation of the external, might need cleansing too, *and that hard water is no more efficacious in one case than the other!*

Brooklin, April 1st, 1854.

#### TO CORRESPONDENTS AND READERS.

A number of interesting articles and original communications are unavoidably crowded out of this number, owing to the length of the Prize List and Rules and Regulations for the Provincial Exhibition.

#### AGRICULTURAL REPORTS.

Reports have been received at the office of the Board of Agriculture, to the present date, from the following County Societies:—Addington, Bruce, Carleton, Dundas, Du ham, Elgin, Essex, Frontenac, Glengarry, Grey, Haldimand, Halton, Hastings, Huron, Kent, Lambton, Leeds and Grenville, Lennox, Lincoln, Middlesex, Norfolk, Northumberland, Ontario, Oxford, Peel, Perth, Peterboro', Prescott, Prince Edward, Russell, Simcoe, Stormont, Victoria, Waterloo, Welland, Wellington, Wentworth.

We have to acknowledge the receipt of the Schedule of Premiums, to be Awarded at the Exhibitions of the Brockville Horticultural Society, the first show to take place on the 29th of June, and the second or Annual Show, on the 14th of September. There are liberal prizes offered for Flowers, Fruits, Vegetables, Seeds, and Poultry. Also £2 10s. for the best Cultivated Garden; £1 10s. for the best design of a Green-house, and £1 5s. for the best specimen of Rustic Work.

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#### BUREAU OF AGRICULTURE.

QUEBEC, May 8th, 1854.

THE following Gentlemen are re-appointed members of the Board of Agriculture for Upper Canada, for the current year, viz.:—

R. L. DENISON, of Toronto,  
E. W. THOMPSON, do.  
HENRY RUTTEN, of Cobourg.  
JOHN HARLAND, of Guelph.

JOHN ROLPH,  
Minister of Agriculture.



**CHALLENGE.****\$1,000 to \$4,000 a Side!**

Or in Friendly Competition.

**IMPORTED "YOUNG LION" Within one Month after his Season is over (due notice being given), is open to WALK OR TROT 5 MILES AND UPWARDS.**

Against any Stallion, Gelding or Mare, of his weight or more, in Canada or in the United States, imported or otherwise, and as a few Horses can be found to weigh with him, any Horse weighing within 250 lbs. of his weight will be allowed to compete.

--ALSO--

At the same time, he will be open to Trot his Mile in less than **FOUR MINUTES**, in or out of Harness.

--ALSO--

At the same time, he will be open to draw any weight from Two Tons and upwards, from 5 Miles to 100 and return unladen in the shortest space of time, against any Stallion, Gelding or Mare, of any class, size or weight, either in Canada or the United States, imported or otherwise.

--ALSO--

For Superiority of Action against any Horse of his Class wherever he can be found.

One Judge to be chosen from among the veterinaries of New York, one from Montreal and one from Toronto, whose services are to be paid for by the Winner.

The Trials to take place in the vicinity of Toronto; and all travelling expenses to be allowed to the Owner of any Horse that may compete coming from a distance.

**W. B. CREW.**

Toronto, May 27th, 1854.

6-6-m.

IMPORTANT TO

**DAIRYMEN & BREEDERS**

OF

**SHORT HORNS!**

IN consequence of the ill state of health of Mrs. Parsons, and she being recommended by her Physician to visit the Old Country, together with other family arrangements, the subscriber has resolved upon discontinuing his Dairy altogether, and there will consequently be offered **FOR SALE BY AUCTION**, on Tuesday, 27th JUNE next, at his residence, Cuddeffe Farm, near Guelph, C.W., the **WHOLE of his VALUABLE HERD**, comprising, Thorough-Bred Short Horn Cows, Heifers, and Heifer Calves; a two year's old, and yearling Bull and Bull Calves, with a number of choice Grade Durham Cows, Heifers with Calves, and two year's old Heifers, all nearly thoroughbred, and selected with skill and care for years past for his own intended use, from the deepest milkers in his Herd.

The Farmers of Canada, therefore, will now have an opportunity, seldom offered, to supply themselves with a foundation of a well-bred Milking Herd.

The Subscriber thinks it desirable to state that, he at first anticipated selling only a part of his Herd, but has decided otherwise, that it may not be said he had reserved the choicest of his Herd for his own use hereafter; all, therefore, will be sold without reserve to the highest bidder. A credit of nine months will be given.

To make the Sale more attractive, the Subscriber has concluded on offering some of his thorough-bred Leicester Sheep—chiefly young, and part of them by Mr. John Wilson's imported best ram. A number of his improved small breed of pigs (Lord Radnor's and Lord Ducie's blood) not to be equalled for symmetry and quality.

Also a powerful Yoke of good Working Oxen.

**H. PARSONS.**

April 20th, 1854.

Cuddeffe Farm, near Guelph, C.W.

N.B.—The far-famed Bates' Duchess blood is infused more or less throughout this Herd, from the celebrated Stock of George Vail, Esq., of Troy, N. Y., and likewise the blood of the Herds of the Hon. Adam Fergusson, of Woodhill, and of John Howitt, Esq., of Guelph. Any comment upon the Stock of either gentlemen would be superfluous here.

Catalogues, with further particulars and Pedigrees, will be shortly out.

**DURHAM BULL CALVES.**

THE Subscriber does not intend to rear any Bull Calves for sale this Season, *unless to Order*. Five thoroughbred Cows, Duchess or Bates blood, are now expected to Calve.

**ADAM FERGUSSON.**

Woodhill, Waterdown,

**PURE BRED STOCK FOR PRIVATE SALE AT****MOUNT FORDHAM, WESTCHESTER CO.,****NEW YORK,***Eleven Miles from City Hall, N. Y., By Harlem R. R. Cars.*

HAVING met with more success than I anticipated the past year, with the Catalogue of male animals at Private Sale, is the reason for offering this lot of animals. **AND MY JUNE SALE BY AUCTION, WILL NOT TAKE PLACE.** A full descriptive Catalogue with prices attached, will be published on the fifteenth of April, and I intend to be at home myself to see any who may call. I will sell at Private Sale, about 13 Short-Horns, 6 of which are young Bulls and Bull Calves. The Cows and Heifers old enough, will be in Calf, to the Celebrated Imported Bull "BALCO," (9918,) or Imported "ROMEO," winner of the First Prize at Saratoga, in 1844; and also at the American Institute the same year.

The young Bulls and Bull Calves are some of them from Imported Cows, and sired in England; the others are sired by the Imported "MARQUIS or CARRABAS," (11789,) winner of the First Prize at Saratoga, the past year, as a two year old.

Also, about 10 head of Devons, consisting of a yearling Bull, sired by "MAJOR," and 5 Bull Calves, sired by my Imported First Prize Bull, "FRANK QUARTLY," and several of them from Imported Cows. The Cows and Heifers old enough, will be in Calf to "FRANK QUARTLY." Also 6 or 8 Suffolk Sows; and several young Suffolk and Essex Boars. Also 2 Southdown Rams, imported direct from Jonas Webb, and 6 Yearling Rams, all bred by me from Stock on both sides, imported from Jonas Webb. Catalogues will be forwarded by Mail if desired.

All animals delivered on SHIPBOARD, or RAIL CAR in the City of New York, free of expense to the purchaser. The Devons are at my Herdsdale Farm, 12 miles north, to which place I will take persons both to and from.

MY FRIEND MR. N. J. BECAR, who is interested in several of my importations, will also sell about 10 head of Short-Horns, consisting of 4 young Bulls, and 5 or 6 Females. His young Bulls are also several of them from Imported Cows, and sired by the "LORD OF ERYHOLMNE," (12205,) and the celebrated First Prize Imported Bull "ROMEO." Mr. Becar's Cows and Heifers are in Calf to the Imported Bull, "MARQUIS or CARRABAS," (11789.) Mr. Becar can be seen at his Store, No. 187 Broadway, New York, at which place he will make arrangements to go to his Farm, at Smithtown, Long Island. His animals will be entered in the same Catalogue with mine, which can be obtained by addressing him at his Store, or to me at Mount Fordham. His animals will be delivered in the same manner as mine. Our Importations have been in almost all cases made at the same time, and are of equal merit, except that I have more in number.

TERMS, Cash on delivery.

**L. G. MORRIS.**

March 16th, 1854.

2m

THE

**CANADIAN AGRICULTURIST,**

EDITED by G. BUCKLAND, Secretary of the Board of Agriculture, assisted by Mr. H. Thomson and the Proprietor. It is published on the 1st of each month by the Proprietor, *William McDougall* at his Office, corner of Yonge and Adelaide Streets,

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OF THE

BOARD OF AGRICULTURE, AGRICULTURAL ASSOCIATION, &c.

VOL. VI.

TORONTO, JULY, 1854.

No. 7.

Reports, Discussions, &c.

YORK TOWNSHIP FARMERS' CLUB.

At a meeting of this Club on 10th May, Mr. James McIlveen read a paper on the "Rotation of Crops," a portion of which we give, as below:—

Soil affords to plants a fixed abode and medium of nourishment. Earths exclusively of organized matter and water, are allowed by most physiologists to be of no other use to plants than that of supporting them, or furnishing a medium by which they may fix themselves to the globe. But earths and organic matter, that is, soils, afford at once support and food. The true nourishment of plants is water, and decomposing organic matter; both these exist only in soils, not in pure earths, but the earthy parts of the soils are useful in retaining water, so as to supply it in the proper proportions to the roots of the vegetables, and they are likewise efficacious in producing the proper distribution of the animal or vegetable matter. When equally mixed with it they prevent it from decomposing too rapidly; and by this means the soluble parts are supplied in proper proportions. The soil is necessary to the existence of plants, both as affording them nourishment, and enabling them to fix themselves in such a manner as to obey those laws by which their radicles are kept below the surface, and their leaves exposed to the free atmosphere. As the system of roots, branches, and leaves, are very different in different vegetables, so they flourish most in different soils, the plants that have bulbous roots require a looser and lighter soil than such as have fibrous roots; and the plants possessing only short fibrous radicles demand a firmer soil than such as have tap-roots, or extensive lateral roots. The constituent parts of the soil which give tenacity and coherence are the finely divided matters, and they possess the power of giving those qualities in the highest degree when they contain alumina. A small quantity of finely divided matter is sufficient to fit a soil for the production of turnips and barley,

and a tolerable crop of turnips has been produced on a soil containing 11 parts out of 15 sand. A much greater proportion of sand, however, always produces absolute sterility. Pure alumina, or silica, pure carbonate of lime, or carbonate of magnesia, are incapable of supporting vegetation, and no soil is fertile that contains as much as 19 out of 20 parts of any of these constituents.

Now as plants derive their nourishment principally from the soil, it will be quite evident that, in order to raise a large crop from a given quantity of land, the soil must contain in requisite abundance, every element required by the plant. It is also plain, that the same kind of crop will require the same elements or principles from the soil in order to their growth and maturity. Hence a succession of the same kind of crops on the same soil, must of necessity exhaust that soil of those elements required by that kind of crop, and as a matter of course, in a few years the crops will become a complete failure. But that same soil may produce a different kind of crop, which requires different elements in its growth, advantageously. Every practical farmer knows this to be the case by experience; but may not always know the cause. This fact being established, is one grand argument in favour of a rotation of crops. But there is another which I will very briefly notice in this place, because I think it necessary in order to carry conviction on this or any other point, that the *why* and the *wherefore* should be given. The Second argument in favor of a rotation of crops is this: Plants as well as animals, take in more food than they can assimilate; and hence the parts not required are secreted. This theory, which seems plausible enough, has been given by Decandolle, and received and supported by others. The above author gives it as his opinion that plants, like animals, have the power of selecting from their food, as it passes through their vascular system, such portions as are likely to nourish them and of rejecting by their roots, during the descent of the sap, such as are unfit to contribute to their support, or would be hurtful to them if not rejected from their system. He also supposes that after



time the soil in which a certain kind of plant grows becomes so loaded with this rejected matter that the same plant refuses any longer to flourish in it. And thirdly, that though injurious to the plant from which it has been derived, this rejected matter may be wholesome food to a different order of plants, and hence the advantage to be derived from a rotation of crops. Nietner, another of the observers of this excreting power of the roots of plants, says that the prolific rye crop obtained without manure from the land which had been three successive years in clover, was owing to a large quantity of this excreted matter contained in the soil, and which he considered to be highly nutritive to the rye. He also states that turnips or beets raised on the same ground which had previously grown tobacco, were possessed of a remarkably bitter and unpleasant taste and scarcely eatable; this he says was owing to the excretions of the tobacco plant, which were absorbed and assimilated by the turnip and beet. Meyen also ascribes the effect of the clover on the rye crop, to the green manure supplied by its roots and stubble, and that of tobacco to the undecomposed organic substances contained in the sap and substance of the stem and roots, of which so large a quantity is left behind in the field. If the opinions of these authors are correct it is certainly a strong argument in favour of a rotation of crops.

Some writers, however, on this subject, do not quite coincide in the opinions of those first quoted, or at least, do not go so far as to agree with their excretory theory in the detail; yet all admit, so far as I am aware, that such a thing really does take place in all plants at some period of their growth, but they do not think that the vegetable excrement is exuded in such abundance as to prove so injurious to the species as has been stated by those already referred to. But even admitting the opinions of these last, of whom Johnson and Macaire may be mentioned as among the number, that plants do not secrete excrementitious matter in such abundance as stated by the others, yet if they secrete any, and if it be hurtful even in a small degree, the validity of the argument still remains in favor of a rotation of crops. We might reason from analogies like the following which tend to give weight to some of the opinions given above. Animals abhor the verdure, however luxuriant, that is caused by a decomposition of their own excrement, while a different species of animal will eat the same with avidity, and no doubt consider it a dainty morsel. This almost every person of observation must have noticed. Again it is said by some that our forests are, in like manner, subject to a change of wood, and that if cleared of the kind of timber now growing in one part, as for instance pine, and allowed to remain uncultivated, it would in time be replaced by trees of a different kind. If this be the case, it is certainly, a very striking proof from nature, of the necessity of a rotation of crops.

Sir Humphrey Davy was the first to introduce a theoretical rotation of crops into England.—The following is his *rationale of rotation*: "It is a great advantage in the convertible system

of cultivation, that the whole of the manure is employed; and that those parts of it which are not fitted for one crop, remain as nourishment for another. Thus if the turnip is the first in the order of succession, this crop manured with recent dung, immediately finds sufficient soluble matter for its nourishment, and the heat produced in fermentation assists the germination of the seed and the growth of the plant. If after turnips, barley with grass-seeds be sown, then the land having been little exhausted by the turnip crop, affords the soluble parts of the decomposing manure to the grain. The grasses and clover remain, which derive a small part only of their organized matter from the soil, and probably consume the gypsum in the manure which would be useless to other crops; these plants likewise by their large systems of leaves, absorb a considerable quantity of nourishment from the atmosphere; and when ploughed in at the end of two years the decay of their roots and leaves affords manure for the wheat crop; and at this period of the course, the woody fibre of the farm-yard manure, which contains the phosphate of lime, and the other difficult soluble parts, is broken down; and as soon as the most exhausting crop is taken, recent manure is again applied. Peas and beans, in all instances, seem well adapted to prepare ground for wheat; and in some rich lands they are raised in alternate crops for years together. Peas and beans contain a small quantity of a matter analogous to albumen, but it seems that the azote, which forms a constituent part of this matter, is derived from the atmosphere. The dry bean leaf, when burnt, yields a smell approaching to that of decomposing animal matter; and in its decay in the soil, may furnish principles capable of becoming a part of the gluten of wheat. Though the general composition of plants is very analogous, yet the specific difference, in the products of many of them, prove that they must derive different materials from the soil; and though the vegetables having the smallest system of leaves will proportionably most exhaust the soil of common nutritive matter, yet particular vegetables, when their produce is carried off, will require peculiar principles to be supplied to the land on which they grow. Strawberries and potatoes at first produce luxuriantly in virgin mould, recently turned up from pasture; but in a few years they degenerate, and require a fresh soil. Lands in a course of years often cease to afford good cultivated grasses; they become (as it is properly said) tired of them; and one of the probable reasons for this is, the exhaustion of the gypsum contained in the soil." The principles of rotations of crops are thus laid down by Yoart & Ch. Pictet: The first principle or fundamental point is, that every plant exhausts the soil. The second, that all plants do not exhaust the soil equally. The third, that plants of different kinds do not exhaust the soil in the same manner.—The fourth, that all plants do not restore to the soil the same quantity nor quality of manure.—The fifth, that all plants are not equally favorable to the growth of weeds.

The following consequences may naturally be

drawn from the fundamental principles :

First, however well a soil may be prepared, it cannot long nourish crops of the same kind in succession.

Second, every crop impoverishes a soil more or less, according as more or less is restored to the soil by the plant cultivated.

Third, perpendicular rooting plants, and such as root horizontally ought to succeed each other.

Fourth, plants of the same kind should not return too frequently in a rotation.

Fifth,—Two plants favorable to the growth of weeds, ought not to succeed each other.

Sixth,—Such plants as eminently exhaust the soil, as the grains and oil plants, should only be sown when the land is in good condition, and

Seventh,—In proportion as a soil is found to be exhausted by successive crops, those which are least exhausting ought to be cultivated.—Again, it might be properly added in this place, rotations of crops are found to be beneficial in destroying insects. Olivier, member of the Institute of France, has described all the insects, chiefly tipulæ and muscæ, which live upon the collar or crown of cereal grasses, and he has shown that they multiply themselves without end, when the same soil presents the same crop for several years in succession, or even crops of analogous species. But when a crop intervenes on which these insects cannot live, as beans or turnips, after wheat or oats, then the whole race of these insects perish from the field for want of proper nourishment for their larvæ.—Without trespassing longer on your time, permit me Sir, to say that the system of rotation is adapted to every soil, though no particular rotation can be given for any one soil which will answer in all cases, as something depends on climate, and something also on the kind of produce for which there is the greatest market demand. But wherever the system of rotation is followed, and the several processes of labor which belong to it properly executed, land will rarely get into a foul and exhausted state; or, at least, if foul and exhausted under a judicious rotation, matters would be much worse were any other system followed. Having thus briefly and imperfectly endeavored to lay before you a few reasons that would seem to favor a rotation of crops, I will now in conclusion adduce a few examples of rotations suited to different soils, as given by Brown in his treatise on Rural Affairs.

The basis of every rotation, he says, "we hold to be either a bare summer fallow, or a fallow on which drilled turnips are cultivated, and its conclusion to be with the crops taken in the year preceding a return to fallow or drilled turnips, when of course a new rotation commences. First, rotation for loams and clays: 1st. Fallow with dung. 2nd. Wheat. 3rd. Beans drilled, but perhaps peas would answer if beans are not cultivated. 4th. Barley. 5th. Clover and grass.—6th. Oats or wheat. 7th. Beans. 8th. Wheat. This rotation, he says, is excellently calculated to insure an abundant crop, through the whole of it, provided dung is administered on the clover stubble. Rotation for clays or loams of an inferior description: 1st. Fallow with dung. 2nd.

Wheat. 3rd. Clover and grass. 4th. Oats.—5th. Beans. 6th. Wheat. According to this rotation the rules of good husbandry are studiously practised, while it is obviously calculated to keep the land in good order, and in such a condition as to ensure crops of the greatest value. If manure is bestowed, either on the clover stubble, or before the beans are sown, the rotation is one of the best that can be devised for the soils mentioned.

Rotation for thin clays: On thin clays, gentle husbandry is indispensably necessary, otherwise the soils may be exhausted, and the produce unequal to the expense of cultivation. Soils of this description will not improve much while under grass; but unless an additional stock of manure can be procured, there is a necessity of refreshing them in that way, even though the produce should, in the meantime, be comparatively of small value. The following rotation is recommended: 1st. Fallow with dung. 2nd. Wheat. 3rd. Grass pastured. 4th. Grass. 5th. Grass. 6th. Oats. Rotation for light soils:—These are easily managed, though to procure a full return of the profit which they are capable of yielding, requires generally as much attention as is necessary in the management of those of a stronger description. Upon light soils a bare summer fallow is seldom called for, as cleanliness may be preserved by sowing turnips, and other drilled or leguminous crops. Grass also is of eminent advantage upon such soils, often yielding a greater profit than what is afforded by culmiferous crops: 1st. Turnips. 2nd. Spring wheat or barley. 3rd. Clover and grass. 4th. Oats or wheat. Perhaps the rotation would be greatly improved were it extended to 8 years, whilst the ground by such an extension would be kept fresh and in good condition. As for instance, were seeds for pasture sown the second year, the ground kept three years under grass, broken up for oats the sixth year, sown with peas in the seventh, and sown with wheat in the eighth, the rotation would then be complete, and prevent the too frequent recurrence of the same kind of crop. Rotation for sandy soils: These when properly manured are well adapted for turnips, though it rarely happens that wheat can be cultivated on them with advantage, unless they are dressed with alluvial compost, marl, clay, or some such substance as will give a body or strength to them, which they do not naturally possess. Barley, oats, and rye, the latter especially, are, however, sure crops on sandy soils, and in favorable seasons will return greater profit than can be obtained from wheat: 1st. Turnips. 2nd. Barley. 3rd. Grass. 4th. Rye and oats.

#### TOWNSHIP OF PERCY FARMERS' CLUB.

(From the Cobourg Star.)

The first meeting of the Farmers' Club, of the Township of Percy, was held on the 1st February at Percy Village. The President, Mr. Clark, addressed the meeting on the system of Agriculture at present pursued in the Township, as follows.



I am sure all of you will agree with me when I say that no Agricultural Society can be complete until it has a Farmers' Club in connection with it. Scotland owes her present high position in Agricultural matters, to her Agricultural Societies and Farmers' Clubs, and the first Farmers' Club that perhaps the world ever saw was established in that country more than a hundred years ago.

It is almost needless for me to say that the proper cultivation of our farms is much neglected, our system is simple and limited in the extreme, we plough our surface, sow our seed, and such a crop as nature gives us we contentedly reap, while it cannot be said that more is done than merely to take advantage of the natural fertility of our soil. It is true that some of us have certain maxims as to the weather and seasons, certain times of the Moon for sowing our Peas, and for killing our hogs, and many other such foolish notions. But how many of us, have but little idea of the value of manure, and the rotation of crops, for we often see manure lying on our field for a whole winter unploughed in, we often see wheat sown after wheat, oats after oats, and pease after pease, and the farmer, instead of procuring at whatever cost the seed most suitable for any particular field, just sowing the kind he can get the easiest or the kind he has most of.

On looking over an Agricultural book a few evenings ago, I could not help contrasting the system pursued by many of us to that pursued in Scot. and more than a hundred years ago. In that country a farmer who farmed 100 acres of land mostly kept the whole of it in some kind of cultivation, at all events, what he tilled had been tilled for years, and what was in grass had been so long in grass that to mow it was next to an impossibility; he had no pasture for his cows and cattle, but they were sent to the neighbouring moors, with some ragged urchin to keep them out of their fields. Their summer fallowing was scratching over a piece of land twice or three times during a summer with a pair of light horses altogether unfit for their work, and those ploughings or scratchings were so few and far between, that a crop of weeds and thistles had time perhaps to come to maturity. Well what was the consequence of such a state of things? It was just this, that the land did not bring  $\frac{1}{4}$  of a crop, the cattle were starved, the horses were unfit for their work, the farmer could not pay his rent, he had not a dollar to pay to an Agricultural Society, nor a half dollar to pay for an Agricultural Book. Now does not that look pretty much like our system here? If our cattle have no moors they have woods to run in, causing a great loss in manure, here many of us keep ploughing and ploughing the same fields year after year, whereas if we would only seed those fields down and plough our old meadows, our crops of hay and grain would both be doubled, many of us also scratch our land instead of ploughing it, and I have often seen our summer fallows with such crops of thistles and weeds on them that they actually looked as if they had been cultivated. Look at our cattle, every year we see them starving and shivering round barns or fences, without

any shelter, and if we have a dollar to pay to an Agricultural Society we have to thank our fruitful soil more than any scientific principle we have ever introduced to increase its natural productiveness.

It is obvious then that something is wanting to improve this state of affairs, and it is of the utmost importance now, as respects our present position, and future progress, that we ought to know more of Agricultural science than we do. It is of importance also that we ought to know more of the breeds and forms of different animals and the characteristic qualities of each, the different modes of feeding and rearing them, the economical advantages of each, the most approved rotation of crops, the different machines for abridging labour, and how to apply Mechanical power to the greatest advantage, and how it that to be effected—why just by our Farmers' Clubs where we can meet and discuss such matters, and bring such knowledge from books and practical experience as will tend to improve us in our Agriculture.

Clubs or Societies such as this, may be said to put each member in possession of the knowledge of all the rest, and to those who have no taste for reading they must prove useful in the extreme; we have resources amongst us we know not of, and resources unknown is money lost.

Look what has been effected in Scotland, look now on that farm which 100 years ago had nothing on it but poor crops, poor cattle, poor horses, poor tenant and poor landlord, look at it now and what do we find? a rich tenant paying perhaps £400 a year rent, a rich landlord encouraging his tenant, and that same farm which formerly could keep nothing but starving stock, sends now hundreds of pounds worth of fat cattle every year to market; on half the land or on 50 acres the farmer now raises double what was formerly raised on the whole 100, while on the other 50 he raises nearly 600 tons of turnips and hay to be converted not only into beef but into manure also, and so highly do they value manure there that it is considered that it alone pays for all the trouble and expense, and that they have the beef for nothing. Let us look nearer home, let us look what has been effected in the neighbourhood of Cobourg, on the same farms where the people who formerly owned them starved and got into debt, we now find tenant farmers paying a heavy rent and getting rich.

I have no doubt that in making these remarks on our system of Agriculture, that many of you have perhaps thought that I was alluding to some of you, but I can assure you that such is not the case, I have seen and can see enough of bad farming on my own farm without bringing up before you anything I have seen wrong in the management of yours; my cows have run in the woods, I have had manure lying all winter in heaps on the field. I once sowed wheat after wheat, and I have committed the most egregious folly of summer fallowing a fine clean piece of sod land, one of the most foolish systems that ever farmers adopted. I also on my summer fallows have seen weeds and thistles large enough to hide a house. I also have had cattle

shivering round the barn, and although I have had the cows stabled for a good many winters it is only this winter that I can say, all are stabled, and when I look back to the time when they were all exposed, when I would go out on a stormy winter's night and see the poor shivering animals huddled up with backs like bows, looking so piteous and helpless; I cannot help contrasting that time with the satisfaction I feel now when I go out and see them all comfortably stabled, with their well filled manger and their comfortable bed; if the night happens to be dark and showery, if the winds are driving the sleet or the drift—I often think on the lines of a favourite Poet.

"The storm without may rain and rattle,  
Tam didna mind the storm a whistle."

#### TOWNSHIP OF HAMILTON FARMERS CLUB.

At a meeting of the Township of Hamilton Farmers' Club, held at Baltimore, on 29th April, 1854, the subject for discussion, viz: "the effect of Railway communication upon the Agricultural Interests of the country, was introduced by D. W. Boulton, Esq., in the following remarks:

The effect of the railway system upon the Agriculturist is a theme at the present period highly interesting to the Canadian farmer, and deserves his best consideration now that in Canada the railway is only becoming a fact and is indeed a novelty. The subject may be considered under four heads, as follows:—

- 1st. Increased value of Real Estate.
- 2nd. Increased production.
- 3rd. Reduced prices of articles of consumption.
- 4th. Facility of communication.

I have adopted the first head as the basis, because the first and most immediate effect is the enhanced value of land, the homestead forming the foundation of the farmer's prosperity. It will be admitted by all present that land in this Township is now worth 33 per cent. more than before the construction of railways commenced; this rise from 100 to 133 of material wealth in the short space of twelve months has enabled the man of large family to sell promptly and move where land is attainable at less cost, and he can procure additional acres for his children; or if suffering from want of means to drain, fence, build or stock his farm with improved breeds of cattle, loans can be effected upon favorable terms in proportion to the increased value of the estate; where there is no desire to sell, lease, or borrow money, it is a comfort and satisfaction to the farmer to know that he has accumulated a property, at all times convertible and available for his children after him. Again if the Municipality in which he resides desires to effect local improvements of a substantial character, the presence of the railway, a sure indication of enterprise, prosperity and wealth, establishes a credit at once available for the pur-

poses of the commonwealth. Assuming the lands of the Township of Hamilton to have been worth £300,000 in 1852, they are now increased to £400,000, accumulated through the introduction of railways, without labour or risk to the population, and this increase is permanent. In proportion to the value of one township over another so will property change hands, adjacent towns and villages increase in size, and a moribund population is induced to establish at the seat of enterprise a foundation for new fortunes and prospects, thus creating additional customers, ready to purchase and enjoy the fruits of the farmer's toil.

Under the second head let us consider the consequent increased production: By the dull observer of events the several deductions which I assume to follow the introduction of railways are not credited; positive individual experience by the producer, of actual increased receipts, is the first convincing proof; the cause of such increase is after all but a natural result patent to the enterprising projector of improvements tho' obscure to the otherwise busy multitude.

From the period when the first call is made upon shareholders of railway stocks, the vivifying influence of a newly created money circulation commences, an influx of labour follows, a local consumptive demand increases for every article of produce, especially for those portions previously commanding no sure market, raw and manufactured material requires transport, the product of the forest, of the mines, iron and coal, of the loom, workshop and forge, is all in requisition; increased population requiring food, clothing and shelter, draws from the farmer first or last the produce of the soil. Thus is created a distribution of floating circulating wealth, and a capital altogether new yet systematical to the means wherewith to supply the rapidly increasing consumptive demand. Now the farmer feels his oats! In the agriculturist more than the artisan, new life is engrafted, and a wealth is established so real in itself, and permanent, that it finds rest in the strong box, or remunerative investment, not liable to the bankers calls at 90 days, or the lawyer at the heel of an execution for debt increased by various fees and sorrowful litigation, as in the past early years of the Colony almost of necessity oppressed the people.

The next natural effect agreeable to the farmer and which his wife and family participate in more largely and rejoice over, is the cheapness of all articles of consumption induced by the newly acquired facilities of railroad communication; so much is the reality of the third position dependent upon the last that I shall consider them in connection. The facility afforded by railway communication enables the merchant to reduce the per centage upon his goods, as continued unbroken communication with the sea-board which in winter Canadians will enjoy at Portland, will render the old system of supplying half yearly spring and fall goods unnecessary, with this change of system will cease long injurious (because expensive) credit; the importer will purchase for cash, the farmer will purchase for



cash, the interest portion of the account is saved, the necessity no longer exists for heavy stocks laying upon the shelves for months, money will be turned over monthly, instead of yearly, 2 per cent. profit upon goods turned monthly is better to the merchant than 25 per cent. heretofore turned annually, it is obvious the farmer saves the money; but the merchant is an actual gainer; in like manner the tables being turned, does the farmer have in sale of his produce, and the merchant gain. Again, wheat sold to-day will be in Portland four or five days after; upon being shipped the sterling bill on England is drawn, the risk is promptly transferred from the Canadian to the English merchant, the profit is certain, interest account is again merged, thus the annihilation of time and space. In these several places of purchase and sale the farmer pays his substantial part with cheerfulness and profit, and the merchant effects the changes with an increased realizing profit and certainty to which heretofore he was quite unaccustomed. The only conclusion I can arrive at is, that every interest benefits by the railway system of communication, and the agriculturists being the strength of Canada, the bearing of this subject upon them is more beneficial than upon others as a class, because more extended, and as a matter of course in like proportion should railways receive the countenance and support of the country.

It must be borne in mind that this mode of communication, because artificial, never ceases, is never disturbed, its existence as a communication for all practical purposes is more easy and certain of control than the bounty of nature can give by her navigable streams and rivers; in winter the waters are closed with ice, in summer often exhausted by drought for a limited period; the railroad is neither locked up by cold, or dried up by heat, nor confined by rivers, lakes or mountains. For example, the course of our own railway to Peterboro': By what possible means could the timber of the everlasting forest be brought out, or the supplies carried back so cheaply and with such facility without change of bulk, over hills, across various rivers and waters as by railway?

By what other means could we bring into active use every foot of water power on the route, to make profitable forests of timber, quantities of which would otherwise form but ashes for the fallow? Instead of carrying timber to the road, the Engineer overcomes nature's obstacles and carries the road to the timber. The maple will no longer yield to the axe of the destroyer for waste on the mountains or valley, but will become a cheaper comfort to the distant fireside.

I can come to no other conclusion than that the system of railway communication is indispensable to the prosperity of the Canadian farmer; without its convenience a continued disparity would prevail when comparing his position with those of his profession living in countries where the locomotive speeds its course, such disparity would ever cause a well grounded discontent that would sooner or later lead to agitation for changes, political or otherwise subversive of

happiness, prosperity, and contentment, the very reverse of the picture that now shadows forth the position of Canada as favored, prospering and contented.

Mr. SUTHERLAND said, that in a town on the other side of the lake, when it was proposed to build a second railroad through it, people said it would never pay; now four railroads pass through the same town and they have all as much as they can do, in fact the merchants of the place told him that they had sometimes to wait weeks for their goods, from the inability of the railroad to forward them. In the neighbourhood he spoke of farming land had risen in value from \$20 and \$40 an acre to \$80 and \$100 per acre, he had no doubt that railroads laid out with judgment and in proper localities in this country would pay well.

Mr. MASSON said, this railway agitation had done him £500 worth of damage; he (Mr. Masson) was about buying a farm for £1500 but since the railroad began they would take no less than £2000 for the same farm, therefore he was not satisfied with the railroads; he thought them good for the country generally, though they had not been good for him in this instance, as he could have bought a farm before much cheaper than he could do now.

Mr. PHILIPS thought that railroads were the greatest improvement that we had ever in the country, though he did not think that our present high prices were altogether caused by them. He thought that they had a tendency to raise the prices of all kinds of farm produce, as they placed the producer in the country almost on a level with those in the neighbourhood of large cities, and they would enable us to reach the seaports at all seasons of the year. He thought farmers had been already more benefited by the making of the railroad in this Township than all the taxes they would have to pay in ten years would counterbalance.

Mr. ALCORN, had no doubt that the completion of the main trunk railway would greatly improve the farmers' position, as it would enable him at any time to reach any market he chose; besides, it would place our merchants and millers in a much better position than they were in before; now they had often to buy wheat and wait three or even six months before they could get it to market, thus running a great risk of prices, besides the interest of their money.

#### ~~~~~ VALUE OF LIVE STOCK IN THE UNITED STATES.

Taking the last census as the basis of calculation, there are at this time about six hundred million dollars worth of live stock in the United States. Their value exceeds that of all the manufacturing establishments in the country, and also exceeds the capital employed in commerce, both inland and foreign.—*Farm Journal*.

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There will never be peace in the palace while there is distress in the cottage.

## Communications.

### A FEW USEFUL HINTS.

*For the Agriculturist.*

The late Benjamin Bell, Esq., of Hunthill, Scotland, made various experiments to ascertain whether light or imperfect seed would vegetate and produce a crop equal to what might be obtained from seed perfectly ripened and safely harvested. The result of these experiments strongly confirms what has been urged with respect to the use of mildewed or diseased grain for seed.

We may only mention that Dr. Bell, in October, 1783, sowed a field of fifteen acres with thirty-six bushels of wheat, of which eight bushels was the best that could be provided in the London market of crop 1782. Twenty bushels of the produce of East Lothian crop, 1783, was also used, and four bushels of the best wheat in the London market, of crop 1782, and four bushels of the produce near Edinburgh in the same year, made out the total quantity. Here it must be remarked, that 1782 was a season generally unfavorable to raising wheat in perfection, but that in 1783, that grain was sound and of excellent quality. The field upon which the above parcel of wheat was sown was well fallowed and equally manured with dung, and the whole seeds were sown in the beginning of October, after each of them had been washed in strong brine, and afterwards dried with new slaked lime. The English seed of crop 1783, was sown on one side of the field, and two bushels of Mid Lothian seed of crop 1782, on three ridges next to it. To this succeeded the English wheat, and next to it the other two bushels of Mid Lothian wheat of 1782. The field being all in good condition, the wheat appeared early above the surface, and the shoots were every where strong, excepting on those ridges sown with Mid Lothian wheat of crop 1782, on which the plants were weak, and not very numerous. Neither did they spread or tiller like the others; so that during the winter and spring month, the wheat on those ridges made a weak appearance, and in harvest the straw was not only thin and of little length, but the ears were short and small, and the grain on this part of the field was not so large or heavy as on other parts.

It was also found on being thrashed and measured, that the produce of the wheat of crop 1782 was only forty-four bushels, or twenty bushels for four; whereas, the produce of the rest of the field was fully sixty bushels for every four of seed sown. The difference in value was also considerable, the produce of the Mid Lothian wheat selling one shilling and three pence per bushel lower than the others.

From the above statement a powerful motive occurs for using only the best grain for seed—the truth of which cannot be too strongly inculcated. That light or imperfect seed will vegetate and send forth a stalk or plant, may easily be admitted, but that the produce of that stalk or plant will not be so healthy or good as what may be obtained from plants of well filled seed, will scarcely be questioned by any one who is not a slave to system.

Very great pains have been used by British breeders to procreate animals from the best and most approved kinds of cattle and sheep; but were it admitted that light, diseased and imperfect grain was capable of making an equal return to the grower, quantity and quality being taken into consideration, it is plain that the breeders of live stock are demonstrably wrong in selecting the strongest and best proportioned animals as the basis of their breeding stock. In making these selections, however, every man will acknowledge that they acted with judgment; therefore it necessarily follows, that the growers of grain who make use of defective seed for sowing their fields, neither consult their own interest nor act with that degree of judgment and understanding which ought to influence and govern every good husbandman.

The farmer who practises husbandry upon proper principles should not only have his fields under all kinds of grain, but likewise a sufficient quantity of grass and grain crops for maintaining his stock of cattle and sheep through all the different seasons of the year. By laying out land in this style, the economy of a farm is so regulated, that while improvements progressively go forward, too much work does not occur at one time, nor occasion for idleness at another.

Suppose two farmers of the same substance, and living upon similar farms; one manages his land with judgment and spirit, makes all the manure he can; sells no hay or straw; does not injudiciously crop his land; drains his fields, and keeps his live stock and fences in good order.—This man grows rich; the other, a sloven in these particulars, dwindles into poverty. These are the circumstances which make the one man rich and the other poor.

Another consideration of great importance is, not to take a farm that may require more money to purchase and stock it well than the farmer is in possession of. Farmers are usually very eager after quantity; the certain consequence of which is a slovenly system of management. Let any one consider the difference between good and bad farming in all its branches: the one is certain loss and the other certain gain. A profitable and proper use of manure, let the farmer now hold in remembrance, is the life and soul of husbandry; therefore those who know the best how to prepare it, and afterwards how to apply it, can scarcely fail of being successful in any situation. Quality of manure is to be considered above quantity—much depends upon how live stock are fed in winter—the better they are fed, the better the manure. With regard to lime, guano, bone dust and plaster, that can only be obtained by those who have money at command.

The advantage of changing seed. In the same field, all equally dressed, one and a half bushels of oats from a different soil and situation; and one and a half bushels of oats grown on the farm not changed for some years, twenty-five bushels were the produce of the former, and twenty bushels the produce of the latter. The produce of the changed seed weighing most and a greater weight of straw.

B.



## GALLOWAY CATTLE.

*To the Editor of the Agriculturist.*

SIR,—In looking over the Prize List of the Provincial Agricultural Association for the present year, which has just come to hand, I observe that no premiums are offered for Galloway Cattle—though the same premiums were offered for them last year as were offered for the Devons, Ayrshires and Herefords. This may partly have arisen from this breed being so little known in the Province, as previous to the past year I am not aware that there was any pure bred Galloway cattle in the country. As different importations of this celebrated breed have been made lately, a brief account of it, collected from various sources, may not be unacceptable to your readers.

The true Galloways are without horns; their color is generally black, though sometimes red and dun; they are the most highly prized of all the polled breeds for their many excellencies.—They are a hardy and docile race and are admirably adapted to the grazier, as they fatten easily, and their beef commands a high price in the English markets; it being fine in the grain, and the fat well mixed with the muscular parts.—The cows do not yield a large quantity of milk, but it is rich and affords comparatively a large proportion of butter, which is of the best quality; the average annual yield per cow, where all the milk is devoted to butter, is about 150 lbs., though larger returns are often obtained.

Jackson, in his excellent treatise on Agriculture and Dairy Husbandry, describes the Galloway cattle thus: "The Galloway breed of cattle is well known for various valuable qualities, and easily distinguished by the want of horns.—It is broad across the back, with a very slight curve between the head and quarters, broad at the loins, the whole body having a fine round appearance. The head is of a moderate size, with large rough ears, chest deep, legs short, and clean in the neck; the prevailing color is black; those of this color being thought the most hardy, although this varies.

This breed is highly esteemed, as there is no other breed which arrives at maturity so soon, and their flesh is of the finest quality; the milk is very fine, but is not obtained in very large quantities."

The points of the Galloway ox are thus given by Martin: "A well bred Galloway ox is of admirable form; all is close and compact; the barrel is rounded and ribbed home to the hip bones; the chest is deep, the shoulders thick and broad; the neck short and thick; the head clean; the back straight and broad; the limbs short, but extremely muscular; the skin moderate, but mellow, and well covered with long and soft hair.—that on the ears, which are large, is peculiarly rough and long.

In the bull the head is heavy; the neck thick, and boldly erected above; the frontal crest or ridge is elevated and covered with long hair, and the general form is robust, with great depth of chest and roundness of barrel." Youatt, in his work on Cattle, speaks in favorable terms of this

breed, but as you are publishing the greater part of his work on Cattle in your present volume, I need not quote any of his remarks, only that he says that "there is perhaps no breed of cattle which can more truly be said to be indigenous to the country, and incapable of improvement by any foreign cross, than the Galloways," and the intelligent Galloway breeder is now perfectly satisfied that his stock can only be improved by adherence to the pure breed, and by care in selection.

Though it is stated that the Galloways cannot be improved by any foreign breed, they have been resorted to for the improvement of other breeds. It is said that the Short Horns owe part of their fine form, and perhaps also part of their early fattening propensities, to this breed.

In the absence of any statistical returns, it is impossible to estimate the numbers of the different breeds of Cattle in Britain, or it might be of use to show what breeds are increasing and what are not. I am of opinion that the Galloway breed is considerably on the increase. The trade in stock cattle from Galloway has been very extensive for 150 years, large numbers of cattle being annually sent to the English market. Professor Low says, "It is computed that upwards of 20,000 head are annually exported from the district—from 16,000 to 18,000 of which are sold in Smithfield. Their average weight at three years old may be reckoned at 630 lbs., and those sent to London weigh from 770 to 840 lbs.

From some returns now before me, it appears that the total number of cows and oxen sold in Smithfield market in 1848, was 218,306, and if we take Professor Low's estimate that 18,000 Galloways are sold annually in that market, it would make them fully one-twelfth of all the cattle sold at Smithfield.

The home of the Galloways is the Counties of Wigton, Kirkcudbright and Dumfries, in Scotland, and a large portion of West Cumberland, in England.

I have thus briefly called your attention to this breed of cattle, which I am glad to see introduced into the Province, as I have no doubt that they will be found a valuable addition to our other breeds of cattle; and it is very desirable that all good breeds should have a fair trial in this country.

Yours truly,

A. TENANT FARMER.

Township of Hamilton,  
June 17th, 1854.

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#### PROGRESS OF THE COUNTY OF PERTH

*To the Editor of the Agriculturist:*

MITCHELL, April 10th, 1854.

DEAR SIR,—Thinking it might prove interesting to some of your readers, I send a few particulars in connection with the position and prospects of the Fullarton, Logan and Hibbert Agricultural Society.

These townships form the western part of the new County of Perth, and are, upon the whole, well adapted for agricultural purposes. The soil consists of a rich clay loam, containing limestone gravel on a clay subsoil. The land is generally rolling, with the exception of a strip along the Huron road, and part of the Township of Logan, which are level, and in some places wet, and on this account a good part of the Township of Logan is still unsettled, though there are blocks of land in the centre and towards the rear of the Township equal to any in the County, and even a great part of the wet land might be brought into cultivation by a proper system of draining, and would thus become the most valuable, and this might be done without any great expense, as there are but few swamps (properly so called), being merely narrow black ash swamps.

Besides the north branch of the river Thames, which rises in the north part of Logan, and the Avon and Whirl Creek, which join it in Fullarton, there are numerous small streams in the three townships.

Most of the inhabitants came in without much capital, taking the land on lease from the Canada Company. Many have since purchased their farms and are now doing well, but there are others who, from various causes, are yet behind, but no doubt many of them will be able, from the improved state of the markets, to meet the demands of the Canada Company, and those who cannot do this will now have ample opportunity to sell out to some of the moneyed men who are now attracted to this part of the County, by the local improvements now in progress.

Owing to the recent settlement there is scarcely any fruit raised here at present, but judging from the number and thriving appearance of young orchards, it will not be long before we shall have a plentiful supply. All kinds of vegetables grow well. Although very little care is taken in sowing oats, they are always looked upon as a sure crop; there is scarcely any corn grown, as owing to the late spring frosts, it can seldom be brought to maturity; though barley and rye do well, yet, from want of a market, very little comparatively has been raised, and, with a Maine Law in view, it is probable there never will be a great demand, unless for some other purposes than that for which they are commonly used. With the exception of the wet pieces formerly mentioned, the land is all well capable of raising fall wheat, which, since the year 1847, has become to be very much cultivated.

The village of Mitchell is situated on the Huron road, and is central to the three townships, having, from its position, such an extensive back country to support it; it is destined to become a place of importance; it has in its limits at present, 3 saw mills, 2 for a double run of saws, which, with the exception of one run of saws, are in active operation. At the time I write, there are also in the Township of Logan, 3 miles from the village, 2 saw mills and an oatmeal mill—all in active operation; there is a grist mill in the village with two run of stones, in which there is always plenty to do.

There will be a Depot of the Buffalo, Brantford and Goderich Railway within the limits, also a foundry is in course of erection.

The building Committees of three different religious bodies, have entered into contract with two companies of brick-makers, who are to supply them with brick to build churches, which, according to their plans, will at least cost on the average each £300. There are three pearl-asheries in the village, that manufactured last year 320 barrels; besides this there was exported from the three townships, by way of Mitchell, 200 barrels of potash; in this item the Township of Hibbert is the largest manufacturer—being settled principally by farmers from the old district of Dalhousie—all of whom had served a pretty good apprenticeship to the business.—There are also 3 tanneries in the village and neighborhood, doing a good business; 3 black-smiths' shops, a waggon shop, and store, all of which do an extensive business; the number of shoemakers is legion, yet a great number of boots are imported; in regard to the number of tailors, I am not so well posted up, The grist mill above mentioned is by no means sufficient for the gristing of the country, and I know of no better opening, for a man of capital, than this; the water is deficient half the year, during which time the farmers have to take their grists at least 12½ miles to the nearest mill; there would be plenty of work for a good steam grist mill, and the people will not be backward in giving assistance to any party that will erect such a concern.

The road to London *via* St. Mary's, strikes the Huron road at the centre of the village, and immediately opposite another road leaves the village and passes through Logan to the Township of Elma; the whole of the road from Mitchell to Elma was let by contract last summer, and will be finished by the first of October next; four or five miles of the front of the Township to be graded and part of it gravelled, the remainder to be chopped and levelled. This will make an excellent road and will greatly enhance the value of the Canada Company's lands, through which it passes, and will likewise be of great benefit to the inhabitants of Elma—giving them a good road to a permanent and convenient market. Last year was the first of our Society's existence, the number of members was 106; this year we have about 150. Last year we bought a Devon bull from Mr. Tye, of Wilmot, price £40. This year we buy a Durham bull,—price any sum we can get him for. The Directors are determined to introduce male animals—cost what they may; consequently the premium list is small, being for this year £33. Almost all the members subscribe to your able journal. Hoping it will continue to give all requisite information on the subject of agriculture.

I remain

Your obedient servant,

THOMAS SMITH.

☞ Trying to farm without capital, is like trying to run a locomotive without fuel. Money and wood both must be consumed, if they are to move the machine of the farm or of the rail.



## INTRODUCTION OF CAMELS INTO AMERICA.

In the last annual report of the United States Secretary of War, it is recommended that the experiment of employing camels and dromedaries in the transportation of military supplies among the regions of the West, be tried. The use of these animals for the object named, would, it is thought, be attended with less expense, and afford a more expeditious mode of conveyance than the means now employed. It seems from an article in the New York *Evening Post*, that an attempt is soon to be made to introduce these animals as beasts of burden into this country. That paper says:

"A company has been formed for this purpose, which has obtained from the New York Legislature a charter of incorporation, and is about to import from different parts of the old world such varieties of camel as are most serviceable, and most likely to bear the change of climate without degeneration.—They are to be employed to carry travellers and merchandise across the arid and barren deserts of which we have recently come in possession. This is the general object, besides which, the company, in a pamphlet which they have recently published, give us to understand that they have a specific object, the nature of which they do not communicate.

"Whether the employment of the camel for the conveyance of heavy burdens would stand any competition with the railways which are, at no distant time, to be made across the deserts separating our Atlantic possessions from the territories on the shores of the Pacific, is a point on which we will not enter. It seems to us, however, pretty certain that the camel may be naturalized in some parts of our country. We possess certain regions which seem as perfectly well adapted by climate and other circumstances to the constitution and habits of this animal, as certain other regions are to those of the horse.

"In the warmer districts of the United States, where rain rarely falls, and where the surface is rocky or sandy, the camel finds a soil, a temperature and state of the atmosphere like that of the countries which it inhabits in the old world. On a clayey or loamy soil, moistened by rain, the camel is wholly unserviceable. Its feet slip with every step, it falls frequently, and if loaded, suffers much from the fall. If urged to move at such times, it becomes frightened and unmanageable.

"At Alexandria, in Egypt, in a wet day, camels are never used. In sand, however deep, the camel walks with a firm and steady step, and climbs, without difficulty, the steepest practicable paths among the rocks. To this purpose its broad, elastic and yielding hoof is well suited.

"In the neighborhood of Pisa, in Tuscany, the camel has long been domesticated. It is employed on a large estate of the Grand Duke, lying west of the city, along the sea-shore. Here it finds mild winters, hot and dry summers, a sandy plain, and in the places where it browses, the same shrubs and plants which spring up in the soil of the Arabian deserts. We have seen files of these animals led by a Tuscan peasant, bringing into the city of Pisa the products of the Grand Duke's farm.

"The almost rainless deserts of Texas and New Mexico are even better suited to the habits of the camel than the seashore of Tuscany. If introduced into that country they would probably soon come to supply the place of horses in the wilderness of Mexico south of the Rio Grande."

## WOMAN ON THE BONE QUESTION.

The question "What is the best way to dissolve bones?" has been greatly agitated amongst our agricultural exchanges. The *Country Gentleman* published an elaborate editorial on the subject. Mrs. Swisshelm—the universal precedent in her case, is our justification for quoting her by name—pitches into the *Country Gentleman's* article as follows:

"It is a fact, Mrs. Smith! You need not rub your eyes and look again, for there is no mistake about it. The *Country Gentleman* is right, and the agricultural papers are positively discussing the question, 'Will ashes dissolve bones?' Aye, and discussing it as gravely as if it was a profound mystery. One agricultural paper says ashes will dissolve bones, and another says they will not, which only proves that every agricultural paper should have one housekeeper in its editorial corps, to keep them from being ridiculous occasionally.

"Any Western farmer's wife or daughter could answer this mooted question on the instant, and would at once say, 'that depends upon the ashes.'

"Any ashes that will make soap will dissolve bones, if you put enough on; but when so dissolved they are rather an expensive manure. We should as much think of sending to the chandler's for a dozen boxes of soap, and putting a quarter of a pound on each hill of corn, as putting all the bones of the kitchen into a hogshead, dissolving them with ashes, and using the mixture, as did the writer in the *Country Gentleman*.

"His was rather an expensive economy. His manure was simply very strong, unrefined soap, which, with a very little difference in the manner of preparing, would have done all the washing and cleaning in the family, when, in the form of refuse suds, it should have been poured on a bed of loam or clay, to make manure for the cornfield, or around the roots of the grape-vines and fruit-trees, as a liquid manure.

The only difference between the plans of making clean soap and the dirty mixture he did make, would be to empty the ashes into a hopper, put the water on them there, let it run off in the form of ley, pour this upon the bones, and either boil them in it, or let them stand in the sun. The bones would dissolve, the limy part settle to the bottom, and the animal fatty and glutinous matter unite with the ley to make the soap.

"One hogshead full of bones and good ashes would make a full hogshead of soap, leaving the leached ashes and phosphate of lime from the bones, into the bargain.

"But quick lime used in this same manner will dissolve bones until they are good food for plants, and this is cheaper than soap ashes."

## Natural History.

### THE OX.—HISTORY, MANAGEMENT, &c.

#### THE POLLED CATTLE.

##### THE GALLOWAYS.

The stewardry of Kincubright and the shire of Wigton, with a part of Ayrshire and Dumfries, formed the ancient province of Galloway. The two first counties possess much interest with us as the native district of a breed of *polled*, or *dodded*, or *humble* cattle, highly valued for its grazing properties. So late as the middle of the 1st century, the greater part of the Galloway cattle were horned—they were middle-horns: but some were *polled*—they were either remnants of the native breed, or the characteristic of the aboriginal cattle would be occasionally displayed, although many a generation had passed.

For more than 150 years the surplus cattle of Galloway had been sent far into England, and principally into the counties of Norfolk and Suffolk. The *polled* beasts were always favorites with the English farmers; they fattened as kindly as the others, they attained a larger size, their flesh lost none of its fineness of grain, and they exhibited no wildness and dangerous ferocity which are sometime serious objections to the Highland breed. Thence it happened that, in process of time, the horned breed decreased, and was at length quite superseded by the *polled*.

The Galloway cattle are straight and broad in the back, and nearly level from the head of the rump, are round in the ribs, and also between the shoulders and the ribs, and the ribs and the loins, and broad in the loin, without any large projecting hook bones. In roundness of barrel and fullness of ribs they will compare with any breed, and also in the proportion which the loins bear to

the hook bones, or protuberances of the ribs.—When viewed from above, the whole body appears beautifully rounded, like the longitudinal section of a roller. They are long in the quarters and ribs, and deep in the chest, but not broad in the twist. There is less space between the hook or hip bones and the ribs than in most other breeds, a consideration of much importance, for the advantage of length of carcass consists in the animal being well ribbed home, or as little space as possible lost in the flank.

The Galloway is short in the leg, and moderately fine in the shank bones—the happy medium preserved in the leg, which secures hardihood and disposition to fatten. With the same cleanliness and shortness of shank, there is no breed so large and muscular above the knee, while there is more room for the deep, broad, and capacious chest. He is clean, not fine and slender, but well proportioned in the neck and chaps; a thin and delicate neck would not correspond with the broad shoulders, deep chest, and close, compact form of the breed. The neck of the Galloway bull is thick almost to a fault. The head is rather heavy; the eyes are not prominent, and the ears are large, rough, and full of long hairs on the inside.

The Galloway is covered with a loose mellow skin of medium thickness, which is clothed with long, soft, silky hair. The skin is thinner than that of the Leicestershire, but not so fine as the hide of the short-horn but it handles soft and kindly.

The prevailing and fashionable color is black—a few are of a dark brindle brown, and still fewer speckled with white spots, and some of them are of a dun or drab color. Dark colors are uniformly preferred, from the belief that they indicate hardiness of constitution.



GALLOWAY OX IN GOOD CONDITION.



The breeding of cattle has been, from time almost immemorial, the principal object of pursuit with the Galloway farmer. The soil and face of the country are admirably adapted for this.—The soil, although rich, is dry and healthy.—There are many large tracks of old grass land, that have not been ploughed during any one's recollection, and which still maintain their superior fertility; while the finer pastures are thickly covered with natural white clover, and other valuable grasses. The surface of the ground is irregular, sometimes rising into small globular hills, and at other times into abrupt banks, and thus forming small fertile glens, and producing shelter for cattle in the winter and early vegetation in the spring. In the low districts there is little frost and snow, but the climate is mild and rather moist; and thus a languid vegetation is supported during the winter, and pastures constantly retain their verdure.

The young cattle are chiefly bred and reared to a certain age upon the higher districts, or upon the inferior lands in the lower grounds. A few cows are kept in the richer soils to produce milk, butter, and cheese for the families; but it is found more profitable to breed and rear the cattle upon inferior lands, and afterwards to feed them upon the finer ground and the rich old pastures. There would be no objection to this if the Galloway farmers would afford their young stock a little shelter from the driving blasts of winter.

The regular Galloway breeders rarely sell any of their calves for veal; which is obtained only from those who keep cows for supplying the villagers with milk, and from the few dairy farms where cows are kept for making cheese.

The best heifers are retained as breeders, in order to supply the place of those whose progeny is not valuable, or who are turned off on account of their age. The other female calves are spayed during the first year. The spayed heifers are usually smaller than the bullocks, but they arrive sooner at maturity; they fatten readily; their meat is considered more delicate, and, in proportion to their size, they sell at higher prices than the bullocks.

The young cattle are rarely housed after the first winter; they are on their pastures day and night, but in cold weather, they receive hay and straw in the fields, supporting themselves otherwise on the *foggage* left unconsumed after the summer grass. Many of the farmers are beginning to learn their true interest, and the pastures are not so much overstocked in summer as they used to be, and a portion of herbage is left for the cattle in the winter; therefore, although the beasts are not in high condition in the spring, they have materially increased in size, and are in a proper state to be transferred to the rich pastures of the lower district.

The Galloway cows are not good milkers; but although the quantity of the milk is not great, it is rich in quality, and yields a large proportion of butter. A cow that gives from twelve to sixteen quarts per day is considered very superior, and that quantity produces more than a pound and a half of butter. The average, however, of a Galloway cow cannot be reckoned at more than six

or eight quarts per day, during the five summer months after feeding her calf. During the next four months she does not give more than half that quantity, and for two or three months she is dry.

It has been said that the young Galloway cattle are more exposed than others to *Redwater*, particularly on grass lands wanting lime. *Quarter Evil* is also a frequent and fatal disease among these young cattle. When the Galloways become two years old, they will yield in hardness to none, and are comparatively exempt from every complaint.

It has been remarked in this, as in some other breeding districts, that cows and heifers of good quality are to be met with everywhere, but that it is difficult to find a Galloway bull free from defect. Too many breeders have become careless from this circumstance. They have been contented with a bull of moderate pretensions, and the form and value of their cattle have been depreciated; yet not to the extent that might be feared, for the imperfections of the sire do not always appear in the progeny, but the sterling characteristics of the Galloway cattle break out again, although obscured in one generation.

A bullock well fattened will weigh from 40 to 60 stones at 3 or 3½ years old, and some have been fed to more than 100 stones imperial weight, at 5 years old.

It has often and truly been remarked, with regard to the Galloway cattle, that while in most other breeds of Scotland there may be some good beasts, but mingled with others of a different and very inferior kind, there is a uniform character, and that of excellence, here; one bullock selected at haphazard may generally be considered a fair sample of the lot. The breeders know, from long experience, what kind of cattle will please the farmers in Norfolk, by whom they are chiefly prepared for the London market, and to that kind they most carefully adhere. The drover likewise becomes, by his profession, an excellent judge of cattle, which he often purchases in large lots.—He is unable to handle half of them, but long practice has taught him to determine at a glance whether they are of equal value and will prove good feeders.

There is, perhaps, no breed of cattle which can be more truly said to be indigenous to the country, and incapable of improvement by any foreign cross, than the Galloways. The short-horns almost everywhere else have improved the cattle of the districts to which they have travelled; at least in the first cross produced manifest improvement; but even in the first cross, the short-horns have done little good in Galloway, and, as a permanent mixture, the choicest southern bulls have manifestly failed. The intelligent Galloway breeder is now perfectly satisfied that his stock can only be improved by adherence to the pure breed, and by care in the selection.

The Galloway cattle are generally very docile. This is a most valuable point about them in every respect. It is rare to find even a bull furious or troublesome.

During the last fifty years a very great improvement has taken place in the rearing and grazing of cattle in Galloway. Most of the great land-

holders farm a portion of their own estates, and breed and graze cattle, and some of them very extensively. Agricultural societies have been established in the counties of Kirkcudbright and Wigton, and all the land proprietors, and the greater part of the tenants, have become members of them. These societies have been enabled to grant numerous premiums for the best management and rearing of stock, and the consequence has been considerable improvement in the breed of cattle, on the undeviating principle, however, of selection and adherence to the pure breed.

COMPARATIVE FEEDING PROPERTIES OF THE SCOTS AND DEVONS.

Francis, Duke of Bedford, in 1795, commenced a series of experiments to test the feeding properties of the various breeds of cattle; and there were few breeds whose relative qualities and value were not put fairly to the test at his estate of Woburn Abbey, and one breed after another was abandoned, until at his death in 1802, he was balancing between the Devons and Herefords.

His brother, who succeeded him, gave preference to the Herefords for feeding, and the West Highlanders for grazing. He abandoned the Devons only as not suiting the soil of Woburn.

The following are experiments made between Devons and West Highlanders and Galloways:

"Twenty Devons and twenty Scots were bought in October, 1822, and wintered.

"Ten of each sort were fed in a warm straw-yard upon straw alone, but with liberty to run out upon the moor.

"Ten were fed in a meadow, having hay twice every day until Christmas.

"They afterwards lay in the farm-yard, and had oat-straw and hay, cut together into chaff. They were then grazed in different fields, equal proportions of each sort being put into the same field.

"Those that lay in the warm straw-yard with straw only, were ready as soon as the others, although the others had an allowance of hay during the winter.

"Sixteen of each were sold at different times; March 24th, 1824, being the last sale. The Scots were ready first, and disposed of before the Devons.

The Scots cost £7 12s 10d each, amounting to £122 5s 4d; they sold for £235 18s 6d.

Gain by grazing..... £113 13 2

The Devons cost £7 6d 6d each, amounting to £117 4s, and they sold for £250; but not being ready, on the average, until between six and seven weeks after the Scots, and estimating their keep at 3s 6d per week each, amounting to £18 14s 6d, and this being subtracted from £250, there will remain as the sum actually obtained for them £231 5s 6d. Gain... 114 1 6

Making a balance in favor of Devons of.. 8 4

The remaining four of each breed were kept and stall-fed on turnips and hay. The Scots sold at £75, and the Devons at £84, the account of which will be as follows.

Four Devons at £7 6s 6d, cost £29 6d; they sold for £84; leaving gain by stall-feeding..... 54 14 0

Four Scots at £7 12s 10d, cost £30 11s 4d; they sold for £75; leaving gain by stall-feeding..... 44 8 8

Making balance in favor of Devons..... 10 5 4

Or total balance, adding the above 8s 4d in favor of Devons..... 10 13 8

This experiment seemed to establish the superiority of the Devons for both grazing and for stall-feeding. But as the gain by the four stall-fed Devons was half as much as that by the sixteen Scots at straw-yard, it was determined that another experiment should be made, in which the whole should be fed alike, both at grass and in the stall.

Twenty Scots and twenty Devons were again bought in October, and sold at different times, but always in equal number of each at each time, the last sale taking place in March.

The twenty Devons cost £189 9s; they sold for £370 17s 10d; leaving for feeding..... £181 8 10

The twenty Scots cost £212 3s; they sold for £374 5s 1d; leaving for feeding.... 162 1 1

Balance in favor of the Devons..... £19 9 9

There have always been some polled cattle in Angus; the country people call them *humlies* or *doddied* cattle. Their origin is so remote, that no account of their introduction into this country can be obtained from the oldest farmers or breeders. The attention of some enterprising agriculturists appears to have been first directed to them about sixty years ago, and particularly on the eastern coast, and on the borders of Kincardineshire. Some of the first qualities which seem to have attracted the attention of these breeders, were the peculiar quietness and docility of the doddies, the easiness with which they were managed, the few losses that were incurred from their injuring each other in their stalls, and the power of disposing of a greater number of them in the same space.

A few experiments upon them developed another valuable quality—their natural fitness for stall-feeding, and the rapidity with which they fattened. This brought them into much repute.

They have much of the Galloway form, and by those unaccustomed to cattle would be often mistaken for the Galloways. A good judge, however, would perceive that they are larger, somewhat longer in the leg, thinner in the shoulder, and flatter in the side.

Climate and management have caused another difference between the Angus doddies and the Galloways. The Galloways have a moist climate; they have a more robust appearance, a much thicker skin, and a rougher coat of hair than the Angus oxen. The Angus cattle are regularly kept in straw-yards during six months of the year, receiving turnips with their fodder every day, and in summer are grazed on dry and warm pastures. By this mode of treatment they look and feel more kindly than the Galloways.

The greater part of them are black, or with a



few white spots. The next general color is yellow, comprehending the brindled, dark red, and silver-colored yellow. They are a valuable breed, and have rapidly gained ground on the horned

cattle, and become far more numerous, particularly in the Lowlands; and when the agriculturist now speaks of the Angus breed, he refers to the polled species.



ANGUS COW, FAT.

The quantity of milk yielded by the dairy cows is various. In the hilly districts from two to three gallons are given per day, but that is very rich. In the lowlands the cows will give five gallons during the best of the season. The cows of this district were formerly regarded as some of the best dairy-cows in Scotland, but since the breed has been more improved, and greater attention paid to the fattening qualities, they have fallen off in their character for the pail. About half of the milk is consumed at home, the rest is made into butter and cheese. The butter, as is generally the case in this part of Scotland, is good, but the chee-e poor and ill-flavored. No oxen are used on the road, and few for the plough.

The Angus polled cattle, like many other breeds, are exceedingly valuable in their own climate and on their own soil, but they do not answer the expectations of their purchasers when driven

south. They yield a good remunerating price, but they are not quite equal to their ancestors the Galloways in quickness of feeding, or fineness of grain. They attain a larger size, but do not pay the grazier or butcher so well.

#### SUFFOLK.

The Suffolk Dun used to be celebrated in almost every part of the kingdom, on account of the extraordinary quantity of milk that she yielded. The dun color is now, however, rarely seen in Suffolk, and rejected as an almost certain indication of inferiority. The breed is *polled*.

The Suffolk, like the Norfolk beast, undoubtedly sprung from the Galloway; but it is shorter in the leg, broader and rounder than the Norfolk, with a greater propensity to fatten, and reaching to greater weights.



SUFFOLK COW.

The prevailing and best colors are red, red and white, brindled, and a yellowish cream color.—The bull is valued if he is of a pure unmingled red color.

Exaggerated accounts have been given of the milking of the Suffolk cow, and she is not inferior to any other breed in the quantity of milk that she yields. In the height of the season some of these cows will give as much as 8 gallons of milk in the day; and 6 gallons is not an unusual quantity. The produce of butter, however, is not in proportion to the quantity of milk.

The bulls are rarely suffered to live after they are three years old, however excellent they may be, for the farmer believes that if they are kept longer they do not get a stock equally good, and particularly that their calves are not so large after that period. Nothing can be more erroneous or mischievous. A bull is never in finer condition than from four to seven years old.

Having obtained by accident or by exertion, a good breed of milkers, the Suffolk people have preserved them almost by mere chance, and without any of the care and attention which their value demanded.

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## Editorial, &c.

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G. BUCKLAND, ESQ., EDITOR.

H. THOMSON, ESQ., ASSISTANT EDITOR.

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### HINTS FOR THE MONTH.

During this month, the eradication of weeds and the hoeing and cultivation of drill crops will claim the particular attention of the farmer. Weeds grow rapidly in this country, especially at this season of the year, and if suffered to get in advance of the crops among which they appear, the latter will have but a poor chance. Such troublesome weeds as Canada thistles may be considerably checked, and some have affirmed, even entirely killed by mowing close to the ground at a particular season in July, when in full flower and vigour of growth. This operation should not be delayed so long that there may be any chance of any of the seed being matured and blowing to other fields. On naked summer fallows, during this month, a thorough ploughing, with the irons of the plough well sharpened, so as not to leave any of the ground unturned will go a great way towards destroying the Canada thistle.

Farmers who have fields or patches of ground where the crop sown has failed from any cause, may still sow some kinds of crops with advantage. On suitable land, buckwheat is a safe and profitable crop, and can always be disposed of readily at a good price in this market. The land

should be of a sandy or loamy nature and well ploughed before sowing. From the beginning to the middle of July is counted a good time to sow this crop. If sown too early the sun is apt to kill the blossoms, and if too late, the crop is liable to danger from frosts in Autumn—about three pecks of seed to the acre will be sufficient. The crop may be sown either to be ploughed in as green manure, preparatory to sowing fall wheat, and which will be an assistance to poor land, or it may be sown with a view of harvesting the grain. If sown to be ploughed down, a somewhat greater quantity of seed should be used.

White turnips may be sown as late as the middle or 20th of July. Although not equal in value to Swedes or mangel wurzel, or so easily kept in winter, they are still useful for sheep and cattle, or will sell readily in the market. The land should be fresh and rich and in mellow condition, and should have sufficient moisture to ensure rapid vegetation. Half a pound of seed to the acre will be sufficient if evenly distributed, and the crop will require little after, cultivation other than a timely thinning.

But the principal business of this month will be the securing of the hay and grain crops, and it is of the greatest importance that the farmer be fully prepared for this work when the season arrives at which it should be performed, and that no other indispensable work should be in the way to interfere with it.

Before this number of the *Agriculturist* reaches our subscribers, the hay harvest will probably have commenced over a considerable portion of Canada West, as clover cutting usually begins, west of Toronto, from the 20th to the 30th of June. The hay crop this year, from the considerable quantity of rain, which fell in the early part of the season, will probably be an abundant one, and most accounts agree in describing it as such. As to the season for cutting hay, although some contend that it should be well matured, or nearly ripe, before being cut, the best farmers generally agree in the opinion that it is better to cut it at an earlier stage: clover as the blossoms are fading, and timothy when in full flower. It is believed that what hay gains in weight, if left standing after that period, it will lose in quality.

As much care as possible should be taken to avoid exposing the hay to rain or heavy dews after being cut. Such exposure, although in bad weather it will sometimes unavoidably hap-



pen, causes a rapid loss of the nutritious elements, as well as greatly injuring it in colour and appearance. Too much drying in the usual hot sunny weather of July is also injurious to quality and appearance. By active management, with the use of a good horse-rake, to gather the hay into small winrows or cocks as soon as sufficiently wilted, and being careful not to cut too much at a time, injury from these causes can usually be avoided. It is prudent management, where there is sufficient barn or shed room, to draw in the hay as soon as it will admit of being done, and let it finish drying upon the mow, rather than run the risk of exposing a large quantity to bad weather. More of the natural juices and colour will thus be preserved. A sprinkling of salt will prevent heating, and will render the hay more palatable for cattle. The saving of good grass seed is an important matter, especially now when it usually sells at high prices, and very often can only be obtained of indifferent quality. Timothy seed ripens about the end of July, and it might be worth while to save an acre or two of good clean timothy for this purpose. The seed could be easily obtained by mowing or cradling, and afterwards thrashing out by the flail, or thrashing machine. Or the fence corners, where good timothy frequently grows, might be turned to advantage in this way.

Wheat harvest will probably commence pretty generally shortly after the middle of the month. We regret to learn from various parts of the province that the wheat crop has been rather seriously injured from winter killing and late spring frosts. It is to be hoped, however, that it may turn out better at harvest than has been anticipated. Most of our Canadian farmers know tolerably well how wheat *ought to be* harvested, but it must be confessed that an inspection of our stubble fields, would occasionally show a sad degree of slovenliness in regard to the way this knowledge is put into practice. The present high prices of grain will probably tempt farmers to be a little more careful in this respect.

A good deal of discussion has been expended upon the question as to the precise period at which wheat ought to be cut. In this climate, however, the time between the heading out, and the perfect ripening of the grain is usually so very short that there is not much time to deliberate. But numerous experiments have amply shown that when the kernel is just getting out of

what is called the milkey state, the farmer may enter it with the cradle or reaping machine, without fear, and need not wait till it is sufficiently ripened to thrash and take to mill as soon as cut. By early cutting the wheat will be improved in quantity and quality, and two or three days gained in this way, may be of very great value in securing the crop, either from the effects of bad weather or from loss by over-ripening. It is not well to be too premature in drawing the wheat from the field, before the straw and grain are sufficiently dried. Dampness in the sample, with difficulty in thrashing and grinding, till late in the winter season, has sometimes resulted from overhaste in this respect. A slight shower of rain would be of less consequence than taking in the crop before sufficiently dry. But it is not advisable to lose an hour in drawing in a field as soon as it is really sufficiently dry. However, our seasons are usually so favourable for harvest operations that there is not often much danger to be apprehended from the weather. But it is well to be prepared for all emergencies, and being careful to bind small sheaves, and stook them up in a proper manner, will facilitate the housing of the crop.

It will be the best policy to have a good supply of hands, and to be rather in advance than behind hand with the work. Although hired labour will probably be more than usually expensive this season, it will still be found to pay better, in the long run, to be amply provided.

#### THE FLAX MARKET.

The *Scientific American* is publishing a series of articles on flax culture, and figures are made to show that the extensive cultivation of the plant would add largely to the income of the country. Great Britain has imported from Russia \$26,000,000 worth of flax every year, and as the ports of that nation are now closed by the war, the demand will be greater than it has previously been.

The *Scientific American* says:—"There are millions of acres in our country, the soil of which has no superior for the cultivation of this plant, and which, we have no doubt, might be profitably applied to such a purpose; there is no mystery whatever about the cultivation; well-drained, ploughed, and pulverized loamy soil, the seed thickly sown, and the plants kept free from weeds, are the plain common sense rules for producing flax of a good fiber."

This subject is equally deserving of attention in Canada, as in the United States. We have frequently brought the matter before our readers.

OFFICERS AND DIRECTORS OF TOWNSHIP SOCIETIES.

City of Toronto, April 17, 1854.

To the Editor of the Canadian Agriculturist:—

DEAR SIR,—Misunderstanding having arisen in several of the Township Agricultural Societies as to whether the officers of the Societies have an equal right with the directors to vote at any meeting of the Board, or whether the directors only are entitled to vote at such meetings; your opinion on this subject, published in your most useful and instructive journal, would set the matter at rest throughout the Province, and much oblige

Your obedient servant,

AN OFFICER OF A TOWNSHIP SOCIETY.

We are rather surprised that the question alluded to by our Correspondent should have arisen, or occasioned any difficulty. We learn that the Boards of Directors in certain Township Societies, have held that the Officers were only authorised to vote at proceedings of the Board *by courtesy* of the Directors! If the Societies were incorporated Companies, in which the Directors themselves engaged the services of paid Officers, the case would be different.—But in the Agricultural Societies, the Officers, that is the President, Vice-Presidents, Secretaries and Treasurers, are elected by the same constituencies as the Directors, viz., the Members of the Society, and they are generally chosen as office-holders for the special reason that they are better acquainted with the affairs of the Society, take more interest in it, or are willing to devote more time and labour to its management than others. They perform their services in most cases gratuitously, or at best receive but a trifling compensation, for loss of time and expenses. It would therefore be rather ungracious to ask them to be mere servants, and do all the drudgery of the Society without having any voice in its management, and that too when they are in fact the best qualified to direct the affairs, or suggest improvements in the working of the Society. But independently of these considerations, we think it clear from the reading of the Act 16 Vic. Cap. XI., that it was the intention that Officers should have an equal voice with Directors in the affairs of the Society.

I do not profess to be authorised exponents of the law, and there is no clause directly affirming the

proposition, but it seems clear from the general tenor of the Act that the above is the correct view. In every clause of the Act, where the Societies are mentioned as being empowered to take any action, it is always provided that it be done by the “*Officers and Directors.*” The 27th clause provides for the election, by the County Societies, of Officers and Directors, viz: “A President, two Vice Presidents, a Secretary and Treasurer; and not more than seven Directors.” The 28th clause says, “The said *Officers and Directors* shall and may, for the year next following the Annual Meeting, and until the election of their successors, *exercise all the powers* vested in the County Society by the Act.” But the matter seems to be placed beyond a doubt by the 29th clause, which says, “The meetings of the *Officers and Directors* shall be held pursuant to adjournment,” &c., &c.; “and at any meeting *five shall be a quorum.*” That is to say, five *Officers and Directors*, (and from the wording of the Act, they might be ALL officers, viz., the President, two Vice Presidents, the Secretary and Treasurer,) are legally a quorum, for the transaction of business, which of course could not be the case, unless the officers had an equal right of voting with the directors on any question. The above clauses are in reference to County Societies; but the 34th, 35th and following clauses provide for the election of officers and directors of township societies, and that they shall conduct the affairs of such societies in the same manner as before directed for county societies.

AGRICULTURAL ASSOCIATION OF LOWER CANADA.

The annual Exhibition of this important Association will take place this year at QUEBEC, on the 12th, 13th, 14th and 15th of September. We trust that a large number of visitors from Upper Canada will attend; and as, under the existing Agricultural Statute, the exhibitions of both Upper and Lower Canada are open to competitors from the whole Province, we subjoin the principal arrangements and regulations of the Quebec Show. Printed Prize Lists may be had by applying to the Secretary of the Board of Agriculture in Toronto.



*Minister of Agriculture :*

THE HON. DR ROLPH, M.P.P.

*President of the Board of Agriculture :*

MAJOR T. E. CAMPBELL.

*President of the Association :*

J. GIBB, Esq.

*Chairman of the Local Committee :*

J. GIBB, Esq.

J. R. ECKART, Esq., *Secretary of Local Committee,*

WM. EVANS, Esq., *Secretary-Treasurer of Board of Agriculture and of Agricultural Association.*

### GENERAL ARRANGEMENTS.

*Tuesday, 12th September.*—Inspection of Implements and Industrial Productions.

*Wednesday, 13th September.*—Trial of Implements and Exhibition of Industrial Productions. Arrangement and Inspection of Stock.

*Thursday, 14th September.*—Exhibition of Stock, Implements, &c.

*Friday, 15th September.*—Exhibition of Prize Stock, Implements, &c. Auction of Stock, &c.

The Competition is open to Exhibitors from all parts of the Province. No Certificate of Entry can be received *after 10th August.*

The Members of Agricultural Societies of the County wherein the Annual Exhibition may be held shall also be Members of the Association for that year, provided the Agricultural Society of the said County shall devote its whole funds for the year, including the Government Grant, in aid of the Association.

The payment of 5s., and upwards, constitutes a person a Member of the Agricultural Association of Lower Canada for one year, and Two Pounds Ten Shillings for Life, when given for that specific object, and not as a contribution to the Local Fund.

Members of the Association are admitted to the Show-Yard without payment, *provided they make application to the Secretary for Tickets of Admission BEFORE THE 8TH SEPTEMBER.* All others to pay 1s. 3d. each time of entrance. —Children to pay half-price.

### GENERAL REGULATIONS.

1. Members of the Association may exhibit free of entry-money two Lots, under any section.

2. Members shall pay on each lot exceeding two in one section, and non-Members on all lots, 1s. 3d.

3. Stock must be the property and in possession of the Exhibitor from the date of the Certificate. In all cases the pedigree of thorough bred Cattle or Horses must be stated in the Certificate.

4. Cows must have produced in 1854, and be in milk at the time of the Show.

5. Evidence may be required that Stallions and Bulls have had produce.

6. Aged Ewes must rear Lambs in 1854.

7. The Premiums awarded will be paid on and after the 1st October. Premiums not applied for by 31st December will be forfeited.

8. Any deception on the part of a Competitor will disqualify him.

9. An animal which has already gained a first Premium at a Provincial Exhibition, cannot again compete in the same class. No competitor can take more than one Prize in each Section.

10. In all cases where any difficulty may arise in regard to Competition, Awarding Premiums, or upon any other subject connected with the Exhibition the Council and Officers of the Association shall decide, and their decision shall be final.

The Judges to meet at the Secretary's Office, on the ground, on Tuesday morning, to breakfast, at 9 o'clock precisely, to make arrangements for entering upon their duties.

Judges are expected to report themselves on arrival, at the Secretary's Office on the ground.

### CERTIFICATES OF ENTRY.

1. Each lot must be intimated by a Certificate of Entry, printed forms of which may be had on application to the Secretary, at the Office of the Association, in Montreal, and to T. R. Eckart, Esq., Secretary Local Committee, Quebec.

2. All Entries must be completed and lodged with the Secretary not later than Thursday, 10th August.

3. No Certificate of Entry will be received without the entrance money.

4. Admission Orders to the Show-Yard will be given when the Certificates of Entry are lodged.

### PLACING AND JUDGING IMPLEMENTS AND INDUSTRIAL PRODUCTS.

1. The Show Ground will be open for the reception of Implements on Monday the 11th September, and all articles must be placed by 12 o'clock on Tuesday 12th. No article will be admitted without an Admission Order, and the different articles must be placed in their respective sections, according to the Classification in the Premium List.

2. A separate space will be reserved for Exhibitors who are desirous of shewing a general collection. A moderate charge will be made according to the ground required, the extent of which must be intimated to the Secretary on or before 10th August. No Exhibitor will be entitled to this privilege who is not a competitor.

3. The necessary articles for trying machines must be provided by Exhibitors.

4. The Judges will commence their inspection at 12 o'clock on the 12th of September (Tuesday), and they will resume it at 7, A.M., on the following morning.

5. A trial of implements will take place during the forenoon of Wednesday the 13th, and at one o'clock the yard will be open to the public.

6. All articles entered must remain on the ground till Friday, 15th.

### PLACING AND JUDGING STOCK.

1. Stock must be brought to the Show Ground between 6 and 9 o'clock on Wednesday (13th) morning. No lot will be admitted without an admission order. At 10 o'clock the ground will be cleared of all persons except the Judges.

2. One Servant will be admitted with each lot, and he must remain strictly in charge of it during the Show.

3. No Neat Cattle will be allowed to enter the Show Ground without being secured in a proper manner by either chain, strap or cord.

4. Bulls must be secured by a ring or screw in the nose, with a chain or rope attached.

5. The competing Stock will be distinguished by numbers, and the owner's name must not be mentioned till the Premiums are awarded.

6. The Judges will commence their inspection at 12 o'clock. They will decide without inquiry as to names of parties or places, and with reference merely to the numbers which distinguish the animals. They will have regard to the Symmetry, Early maturity, Purity, Size and General Qualities characteristic of the different breeds.

7. In no case shall a Premium be awarded unless the Judges deem the animal to have sufficient merit, more especially if there be only one lot in the section.

8. A Member of the Committee will attend each Section of the Judges. It will be his duty to see that no obstruction is offered to them, to communicate between them and the Secretary, to complete their reports and to ticket the Prize Animals. None of the Tickets so placed shall be removed. The ground will be open to the public at 8 o'clock on Thursday morning 14th.

9. No Stock to be removed from the Ground till 6 o'clock on the evening of Thursday 14th.

#### EXHIBITION OF PRIZE STOCK AND IMPLEMENTS.

Prize Stock and Implements must be on the Ground by 9 o'clock on Friday 15th, under penalty of forfeiting Premiums.

#### AUCTION.

An Auction of Stocks and Implements will take place on the 15th at one o'clock. Exhibitors should state with their entries whether Stock is to be exposed to sale and furnish particulars of Pedigree to enable the Secretary to give the Auctioneer the information requisite for his Catalogue of Sale.

N.B.—These Regulations will be strictly adhered to.

By Order of the Board,

WM. EVANS, *Secretary.*

Montreal, 24th May, 1854.

#### EXHIBITION OF THE AGRICULTURAL ASSOCIATION OF UPPER CANADA.

Our readers are already aware that the Provincial Show, for the present year, will be held at London, on September 26th, 27th, 28th and 29th, and we are happy to assure them that everything, at present, promises a successful result. A most convenient site on the Barrack Ground has been chosen, and the Local Committee are proceeding with the arrangements for erecting buildings,

fences, &c., with energy and dispatch. The enterprise has been taken up by the citizens of London, and the United Counties of Middlesex and Elgin, with a zeal and liberality, which leave no doubt of its being satisfactorily and triumphantly carried through.

The Premium List has been considerably extended, and many of the Prizes, particularly for Live Stock, have been much increased. With a view of encouraging the introduction of improved Stock, the Board passed a regulation offering double the amount of the advertised Premiums to all male animals that shall obtain First Prizes, provided such animals have been imported into the Province, since the date of the last Exhibition.

We are authorized in stating that good specimens of all breeds of Stock, not enumerated in the Prize List, will receive liberal attention and encouragement; and this remark will apply to Implements and productions generally. "A Tenant Farmer" may, therefore, rest satisfied that Galloway Cattle will form no exception. It will continue to be the desire of the Board of Directors to conduct the affairs of the Association in as economical a manner as is compatible with convenience and general efficiency, that as large a sum as possible may be distributed in the form of Premiums.

The Directors of the Great Western Railway Company have, with a commendable liberality, engaged to carry all Stock and articles to and from the Exhibition, *free of charge*; and they will run additional trains to meet the convenience of visitors; so that with these advantages, it is confidently expected the public will experience no want of accommodation.

Prize Lists, containing full particulars, will be sent to the different Agricultural Societies and Post Offices in the Province, and may be obtained from the Secretary of the Local Committee, J. B. Strathy, Esq., London; or from the Board of Agriculture, Toronto.

*The Office of the Board is situated on the corner of King and Simcoe Streets, close to the Old Government House, where all farmers feeling an interest in the promotion of Agriculture, &c., are respectfully invited, when in Toronto, to call. Hours of attendance from 10 to 4, daily.*

The whole amount of the land in Canada West, owned by fugitive slaves, is stated at 55,000 acres. It is estimated that there are over 35,000 colored people now in Canada.



### WILL THE HIGH PRICES CONTINUE?

Since the appearance of the June number of the *Agriculturist*, prices in Toronto, especially of wheat, have reached a higher point than for many years, some lots having sold as high as 9s. 6d. currency. Since later arrivals from Europe, prices have suffered a considerable decline, and at the time we write 7s. 10d. for wheat is the highest price in Toronto. Under the above heading, a late number of the *New York Tribune* has the following article, which will be read with some interest by farmers in Canada:—

A general appreciation of prices has been in progress for some five or six years past. Although its more immediate and visible impulse was the gold discoveries of California and Australia, yet it has roots which reach below these. For nearly 40 years, the civilized world has been substantially at peace, which have consequently made great progress within that period. The population at the civilized world has largely increased, causing a corresponding increase in the value of lands; for the greater the population to the square mile of any district, the higher (other things being equal) will be the price of lands within that district. Industrial progress has increased the efficiency of labor individually and in the aggregate, so that the annual product of human work throughout Christendom is at least double that of 1814. Luxury and extravagance have doubtless become more diffused within these forty years; yet every year of peace and prosperity sees some surplus of earnings over expenditures accumulated and invested in buildings, canals, railroads, improvement of lands, &c., so that the aggregate value of property, the unconsumed product of labor, is probably at least double this day what it was on the 1st of June, 1814. Hence confidence, credit, currency, have all been expanded and diffused. Lands and buildings afford a perfect security for nearly their present valuation whenever it is morally certain that such valuation will not be diminished for years to come; hence loans or mortgages on the personal obligation of property-holders are negotiated with facility, and continued without reluctance or distrust. Thus trade expands and is accelerated; money becomes abundant; paper circulates freely, and coin is rarely demanded or needed.

Will the present high prices continue?

In so far as they are based on the increased efficiency of human labor, they will, of course. It is not likely that the implements of industry will ever be ruder or less effective than they now are. On the contrary, it is highly probable that Invention and Improvement will reiterate their successes, until one man's labor will produce as much as that of two does, just as one man's now produces as much as that of two did some years ago. On this head, therefore there is no prospect of a general reduction of prices.

Nor do we think it probable that a collapse will result from the exhaustion of the Gold Mines. California may gradually cease to pro-

duce the shining dust; we hope for her sake she may. Australia may follow, though probably at a late period; but the impulse they have given will not soon be arrested. Already Southern Africa; the vast South American region forming the sources of the Andes; Central America; Northern Mexico; Oregon and Washington Territories; and even a good portion of our Southern States, are haunted and harassed by gold-seekers. Most of the individual hunters will probably be disappointed; but some of them will open new fields or increase the product of old ones; and the general result of their operations will be a large and steady increase of the Gold-yield for many years to come—probably for at least a generation. And, so long as the aggregate amount of the precious metals in circulation or in bankers' vaults is increasing, the amount of paper currency in circulation will tend to increase, and prices consequently to rise still higher.

We regard the great war just commenced as the chief antagonist influence to threaten inflation. War is a terrible consumer of property at best; it abstracts men and capital from productive industry and devotes them to the work of destruction. Two fleets or two armies meet in battle, and, which ever may conquer, the net remainder is worth a good deal less next day than they were the day before. A fleet bombards a fortified city, and the fleet and city together will probably have less cash value at the close than either had at the beginning of the fray. The British and French fleets are now consuming an immense quantity of coal which ought to be applied to smelting iron. Should this war continue five years, it will have devoured more property than Turkey in Europe would sell for if brought to the block, with George Robbins for auctioneer. And this, if we do not misread the laws of currency, will tend to depreciate prices generally. True, depreciation is seldom realized during the continuance of the war, because the factitious activity and prodigal expenditure incident to war fully counteracts for the time the effect of Property diminution on currency; but whenever peace is restored, and business resumes its natural and healthful channels, the chasms created by war become evident.

If the world has grown richer in precious metals since 1849, it must be plain that this wealth has been acquired at the expense of property in some other quarter. The men who have dug, say five hundred millions in gold, would, but for this employment, have cleared off more forest, broken up and fenced more prairie, mined more coal and ore, made more iron and cloth, grown more grain and reared more cattle, had they not been drawn into gold-mining. And this abstraction of labor from agriculture and manufactures, to mining, has doubly tended to enhance prices—1. by making money more abundant;—2. by making other products relatively scarce. Our readers, being familiar with the arguments in favor of protection to home industry, will not need further elucidations of this point.

Whether the world is actually richer this day for the modern gold-diggings—in other words, whether the gold actually obtained since 1849 is worth more to it than clearings, grain, cattle, iron, steel, cloth, pork, &c., which the labor devoted to mining would have produced in the absence of gold-hunting, is a grave question. We do not doubt that this country would have been richer and more truly prosperous this day if the time and labor, outlay and capacity, devoted to California, had been expended in opening mines of iron, coal, copper, zinc, lead, &c., on this side of the Rio Grande, in wresting farms from the wilderness, and in covering them with stock and growing crops. But, since it is plain that, in the absence of an effective tariff, the labor and capital attracted to California would not all have been devoted to such pursuits in the States, but would, in good part, have stood unemployed or been expended to little purpose, we think the influence of California has, on the whole, been beneficial. Yet no one needs to be told that the seventy millions of gold annually received from California are worth no more to us, nor even to our currency, than would be seventy millions' worth of the coal, iron, steel, cloth, silks, &c., which we now import.

But will prices of food rise still higher? We think not in the average, though the prices of some products may. Breadstuffs especially have been carried up by an unfavorable season and a consequent short crop in Europe, which are not likely to be repeated this year. The war will abstract many hands from production and devote them to destruction; still, the deficiency of food on the Continent will probably be less than it has been. At present, France and Great Britain are drawing heavily upon us for specie, as they would not be if they were deficient in breadstuffs. We see that grain and flour sent here from Canada in bond for exportation to Europe, have been released by the payment of duties, so as to be thrown upon our market. In fact the prices of bread and meat are scarcely higher in Old than in New England, while vegetables in the average rule lower. We doubt that there is a city in Europe where potatoes are so high as in New York.—The backward spring contributes to make all descriptions of green vegetables much dearer than usual.

We think breadstuffs and beef will be cheaper soon, but not so much cheaper as our city population naturally wish them. Farming is shunned by the great majority of our more intelligent and enterprising native citizens; trade, manufactures, invention, shipping, mining, law, physic and gambling (witness the 'Gift' humbugs of all shapes and sizes) are more attractive; and, while this shall continue, we must eat dear bread and be glad to get it at any price. Agriculture, guided by science, and pursued with a noble ambition, is the only effectual remedy for the prevailing dearth; and this, like most effective remedies, is slow in its operation. Let us patiently do the best we can.

There is more fatigue in laziness than in labour.

#### IMPORTATION OF PURE BRED STOCK.

We are glad to perceive evidence of increasing enterprise among a number of Canadian farmers, more particularly in reference to that most important department of rural economy,—the improvement of live stock.

A short time since, Mr. Dickinson, of Port Hope, imported from England a Durham bull, two Yorkshire pigs, and forty Leicester sheep, all of which are described as being excellent specimens. The charges for freight from Liverpool to Portland, by the steamer *Sarah Sands*, are said to have been, for the bull, £20; pigs, £9 the pair; and £4 10s. sterling for each sheep.

Mr. Ralph Wade, Jr., near Cobourg, had some excellent sheep by the same vessel, and his celebrated young Durham bull, "Sir Charles Napier," sired by the world-renowned bull, "Belleville," the property of John Mason, Esq., of Yorkshire, England. Mr. Wade seems determined that neither trouble nor expense shall deter him from procuring the finest specimens of stock, which England can supply. The reader will find more particulars of Sir Charles in an advertisement at the end of the present number.

We have heard of several other instances of recent importations in different parts of the Province, but not having been made acquainted with the particulars, we are unable to do more than make this general allusion. Mr. George Miller, of Markham, has again imported some very fine Leicester sheep; and we hear that Mr. E. W. Thomson, the President of the Board of Agriculture, has just procured a very fine Durham bull, from the United States.

The farmers of Northumberland and Durham seem determined not to be outdone in this particular department of agricultural improvement as we have just learnt that Mr. George Roddick of the township of Hamilton, has recently arrived from Scotland, with three very fine Galloway cattle (a bull and two heifers), a Short Horn bull calf and heifer, with some Cheviot and improved Leicester sheep.

We are pleased to see the importation of new breeds that have not yet been tested as to their adaptation to the climate and pasturage of this country. It is to be hoped that the Provincial Association, and Agricultural Societies, and enterprising individuals generally, will extend a liberal degree of patronage to whatever promises to improve and diffuse the live stock of the country. Times are now vastly different with farmers



to what they were, and we hope and believe that the extremely low prices, to which they have so long been accustomed in Canada, are gone forever. Butchers' meat, like most other productions, commands a good remunerating price, and promises to continue so. It will therefore be much to the interest of the farmer to adopt and persevere in a systematic improvement of all kinds of domesticated animals, and we would warn him against a penny-wise and pound-foolish system, which an ill-informed niggardliness is always so inclined to pursue. Such animals as are really qualified to improve the stock of the country, can neither be purchased nor reared without much care and pecuniary outlay. The risks of importing from the other side of the Atlantic are enough to damp the most ardent spirit. Several recent instances of heavy losses to Canadian breeders must be fresh in the recollection of most of our readers; and we have just been informed of a Society in the State of New York having lost at sea, twelve, out of twenty-four very costly animals!

With the almost unexampled high price of pure bred stock in Britain, and the great risk and expense incidental to importation, farmers must make up their minds to pay a corresponding charge for the use or ownership of such animals as have cost the enterprising breeders and importers such a heavy amount of money, anxiety and skill. It may be safely taken as an axiom of stock-breeding, *that a liberal outlay, made with judgment at first, is the shortest road to ultimate success, and the maximum of profit.\**

#### TRADE OF CANADA.

The annual report of the Montreal Board of Trade recently published, and which is a document of considerable length, gives some interesting statistics in reference to the Trade of Canada.

The point started from is the year 1846, when the restrictions upon Free Trade were finally abolished, and the measures introduced by Sir Robert Peel, caused such a change in the commercial relations between ourselves and England. Since then, the amount of the trade between the British North American Provinces and the United States, has been rapidly increasing—the value

of the exports and imports in 1852, having nearly doubled that of 1849. A like increase marks the trade between Canada and the United States for 1849. While the exports amounted to \$1,481,082, and the imports to \$4,243,724, in 1852 the value of the former had increased to \$4,589,969, and the latter to \$6,717,960. In 1849 the quantity of flour and wheat exported was equivalent to 24,936 barrels; in 1852 it had increased to 466,912, while in 1853, the exports to Oswego and Ogdensburg of flour and wheat alone, amounted to 587,380 barrels.

Since 1847, the increase in the general trade of Canada has been as marked as satisfactory. In that year the imports were valued at £2,966,870, and the exports at £2,203,954, while in 1851, they had increased the one to £5,071,573, and the other to £3,513,995.

#### GUANO.

This manure has not been introduced into Canada, except to a very limited extent. In the United States, it has been extensively employed in the neighbourhood of the large cities, but the enormous increase of price lately, in consequence of the measures of the Peruvian Government, will compel the substitution of other manures. The New York *Tribune* of a late date says:—

“The Peruvian Government has put up the wholesale price of this famous fertilizer to \$60 per ton. The excuse for this is the prevalence of high charges for freight; though we believe the extension and eagerness of the demand has been quite as potent in the premises.

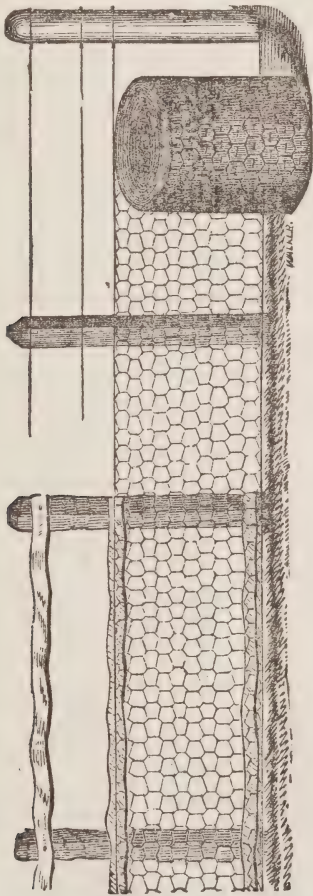
Well: we don't say that Guano won't pay even at \$60 per ton; but we do say that most farmers can buy or make what is of at least equal value for \$50. Phosphates and Super-Phosphates, Ground Bones, Poudrett, Lime, Plaster, Potash, Soda, Salt, and many other fertilizers, can be bought so as to do the farmer better service than Guano at \$60 per ton. And any farmer who will set earnestly and intelligently to work to make or save fertilizing materials, can find in some convenient swamp, or marsh, or pond, or slough, what, by wise treatment with salt and lime, or by mingling with the contents of his barn-yard, will pay him better than buying Guano at \$60 per ton.

Guano is a quick, heating, stimulating manure, and has rapidly won a wide reputation, not undeservedly. It suits those who want to see the beneficial result of their application forthwith. But it were absurd to suppose that our farmers need send to the Pacific Ocean for the means of renovating their exhausted lands. There are ample fertilizers beside, and more will doubtless be developed by observation and the progress of science. If all would hold off from buying, the price of the Peruvian dust must come down, or, if not, we can learn to do quite as well without it.

\*Several instances have lately come to our knowledge which show that Canadian farmers are beginning to comprehend this truth. The Hon. Adam Ferguson informs us that he sold all his bull calves this spring at satisfactory prices without any difficulty. An inferior animal would often prove dear as a gift while one of really superior excellence and inheriting from both sides, *pure blood*, would be safely purchased at almost any price.

WIRE NETTING.

This useful and elegant material, which is susceptible of so many applications to purposes of the farm, garden, domestic and ornamental buildings, &c., can be procured in Toronto, of Mrs McAndrews, who makes it by hand, at a reasonable price. Specimens have been used at the two last Provincial Exhibitions for securing poultry, &c., which have attracted much notice and approbation. It makes a safe and elegant fence as shewn in the engraving, and different varieties and patterns are adopted to several purposes. Mrs. McAndrews also makes netting for sieves for fanning mills.



PRICES.

|                                               |        |
|-----------------------------------------------|--------|
| For Fencing 1 yd. wide mesh. 2 inb. per yard, | 2s. 9d |
| " Fanning mills 1 yd. do do 1 inb. do         | 5s.    |
| " do do 1 yd. do do ½ inb. do                 | 6s. 6d |

Direct to Mrs. McANDREWS, Wire Worker, care of Mrs. Dunlop, Bay Street, Toronto, or to Mr. HAWORTH King Street, Toronto, where patterns of the work can be seen.

THE CURCULIO.

This insect is becoming so destructive to plums, &c., in Canada, that any method by which it can be destroyed should be made widely known. A correspondent of the *New England Farmer* suggests the following remedy, which is at least practical and simple, and if punctually adhered to would probably be efficacious:—

Take ten yards (and if your trees are very large, more will be required, and add another breadth,) of cheap sheeting, cut the same in three equal parts, and have them sewed together so as to form a mammoth sheet, cut half way through the middle, and have it hemmed; with this you can completely cover the ground under the trees, and with the aid of two or three children to assist in holding the corners and spreading the same, a vast number of curculios may be destroyed in one hour's time. The way to proceed is this: after your sheet is spread give the trees a sudden jar; if the trunks are not more than three inches in diameter, nothing more than the hand will be required; if trees are large, have at hand a large mallet, with the corners rounded off, and wound with cloth, under which there should be a little stuffing to prevent injury to the bark; strike with that square against the stem of the trees, then at once, with a pair of pincers made of the thumb and fore finger, dispatch the curculios, or they will soon be off. Be sure and pinch hard enough to break their shells. If you have help sufficient to hold the sheet up to the lower branches when the tree is shaken, more curculios will be secured, for I have noticed that in their descent from high trees they sometimes fly before striking the cloth. If the insects are numerous, visit your trees once a-day, say just before sunset, and you will thin them out fast.

If you have cherry trees in bearing, visit those with your sheet and mallet and pincers. Every dozen insects treated in this way, makes the number less to propagate the species; but most other plans only drive them to other places, if indeed they have any effect at all.

The other method is, pick the fallen fruit, and either burn or empty it in the water where the embryo curculio will drown. I think this insect propagates its species as fast in apples, as in any other fruit. If any one doubts this, let him visit a tree laden with fruit, when it is about the size of cranberries, or walnuts, and carefully examine the abortive specimens with which the earth is sometimes literally covered; observe the crescent marks, and the small worms in the fruit, and I trust he will be convinced.

Where these fallen specimens are exposed to the scorching rays of the sun, it usually bakes them, and their contents; but when shaded, the embryo curculios nearly all mature. Pick and boil or empty this infected fruit into the river. This may seem like too much labor, but you will surely receive a rich reward for care and labor thus bestowed.



## MANURES.

The *Rural New Yorker*, in answer to a question as to whether land which now, by the use of plaster and clover, produces every other year 30 bushels of wheat per acre could be made, by the use of guano and leached ashes, to produce 30 bushels per acre every year? and if it will, what amount would it be necessary to apply each time, and how should it be applied? says:—

"On such land as you describe, there cannot be the least doubt but that by the aid of guano and ashes, from 30 to 40 bushels of wheat per acre may be raised every year. Some 500 lbs. of good Peruvian guano would be required per acre each year. We would sow half of it in the fall and the other half early in the spring. The great practical difficulty in the way of growing wheat every year is in *keeping the soil clean*. In Mr. Lawes' experiment, where he has grown wheat eleven years in succession, he drills in the wheat in rows a foot apart and hoes it twice or thrice in the spring. By such constant tillage the soil is apt to become too light for the wheat plant. But this may be avoided to some extent by sowing early and treading it with sheep in the fall, or by the use of a heavy roller, or Crosskill's Clod Crusher. But will such a system of cultivation pay? We answer it will pay well, if wheat sells for \$2.00 per bushel. It certainly will not pay with wheat at \$1.00 per bushel."

## SALES OF ENGLISH STOCK.

The following particulars, taken from the *Farmer's Almanac* (London) for the present year, of a few of the sales of the most celebrated breeders of *Short Horn Cattle*, will be interesting to many of our readers. For the convenience merely of reference, the lists will always be valuable. They show the high value attached to that most distinguished breed by the highest possible authority:—

The two last years will be long remembered in the history of British Agriculture. They include the period of minimum prices, and of the greatest Agricultural difficulties. It will be noted too, perhaps, by the future historian, how well and how energetically the unconquered British farmers strove to meet the natural as well as Legislative difficulties with which they were surrounded—how ardently they labored to increase the productiveness of their soils—and how ably they directed their attention to the most profitable branch of Farming which presented itself—the increase of numbers, and the improved breeding and feeding of their live stock. Such an

historian too will not forget to notice one or two of the results of that skill, that science; he will glance at the memorable sale of Lord Ducie's Short Horns, at Tortworth, August 24, 1853, as one of those events which those who are apt to undervalue the efforts of the English breeder will do well to study. We subjoin the result of that sale, as well as those of the celebrated Charles Colling, of Ketton, near Darlington, October 11, 1810; of Robert Colling, at Barmpton, September 29, 1818; and of Mr. Thomas Bates, of Kirkleavington, May 9, 1850. The following Tables give the prices obtained at these memorable sales:—

## CHARLES COLLING'S SALE.

| Cows.                 | Age. | Gs.  | Heifers.                | Age. | Gs. |
|-----------------------|------|------|-------------------------|------|-----|
| Cherry                | 11.  | 83   | Phoebe                  | 3.   | 105 |
| Peeress               | 5.   | 170  | Young Duchess           | 2.   | 183 |
| Countess              | 9.   | 400  | Young Countess          | 2.   | 208 |
| Celina                | 5.   | 200  | Lucy                    | 2.   | 132 |
| Lady                  | 14.  | 206  | Charlotte               | 1.   | 132 |
| Lily                  | 3.   | 410  | Heifer calves und 1 yr. |      |     |
| Bulls.                |      |      |                         |      |     |
| Comet                 | 6.   | 1000 | Lucella                 |      | 108 |
| Major                 | 9.   | 200  | Calista                 |      | 50  |
| Petrarch              | 2.   | 365  | White Rose              |      | 75  |
| Alfred                | 1.   | 110  | Altogether it appears   |      |     |
| Duke                  | 1.   | 105  | that—                   | £    | s.  |
| Bull calves under one |      |      | 17 cows sold for        | 2802 | 9   |
| year old.             |      |      | 11 bulls                | 2361 | 9   |
| Young Favorite        | 140  |      | 7 bull calves           | 637  | 15  |
| Geerse                | 120  |      | 7 heifers               | 942  | 19  |
| Sir Dimple            | 90   |      | 5 heifer calves         | 321  | 6   |
| Cecil                 | 170  |      | 47 lots                 | 7115 | 17  |

## ROBERT COLLING'S STOCK SALE.

|                   | Gs.  |                         | Gs. |
|-------------------|------|-------------------------|-----|
| 34 cows produced  | 4141 | One 2 year old cow sold |     |
| 17 heifers        | 1287 | for                     | 331 |
| 6 bulls           | 1313 | One 4 do.               | 300 |
| 4 bull calves     | 713  | One 5 do.               | 370 |
|                   |      | One 1 do. bull calf.    | 270 |
| 61 head of cattle | 7481 | One 4 do. bull.         | 621 |

## THOMAS BATES'S SALE.

The herd of Mr. Bates consisted of six distinct tribes or families; viz., the Duchess, the Oxford, the Waterloo, the Cambridge Rose, the Wild Eyes, and the Foggathorpe.—*Newcastle Journal*.

| DUCHESS         | £     | s. | WILD EYES.         |       |    |
|-----------------|-------|----|--------------------|-------|----|
| 4 cows sold for | 322   | 7  | 9 cows sold for    | 328   | 13 |
| 3 heifers       | 441   | 0  | 7 heifers          | 440   | 10 |
| 1 heifer calf   | 162   | 15 | 2 heifer calves    | 61    | 1  |
| 4 bulls         | 625   | 16 | 4 bulls            | 254   | 2  |
| 2 bull calves   | 75    | 12 | 3 bull calves      | 126   | 0  |
| 14 head         | £1027 | 10 | 25 head            | £1213 | 6  |
| OXFORD.         |       |    | FOGGATHORPE.       |       |    |
| 4 cows sold for | 283   | 15 | 2 cows sold for    | 74    | 11 |
| 2 heifers       | 95    | 11 | 1 heifer calf.     | 31    | 10 |
| 4 heifer calves | 303   | 9  | 4 bulls            | 222   | 13 |
| 3 bulls         | 206   | 17 | 7 head             | £328  | 13 |
| 13 head         | £894  | 12 | THE SALE CONSISTED |       |    |
| WATERLOO.       |       |    | £                  | s.    |    |
| 2 cows sold for | 101   | 17 | 22 cows which sold | 1163  | 8  |
| 3 heifers       | 180   | 12 | for                | 1221  | 3  |
| 1 heifer calf   | 74    | 11 | 16 heifers         | 662   | 11 |
| 6 head          | £357  | 0  | 10 heifer calves   | 1309  | 7  |
| CAMBRIDGE ROSE. |       |    | 15 bulls           | 201   | 12 |
| 1 cow sold for  | 47    | 5  | 5 bull calves      | 201   | 12 |
| 1 heifer        | 73    | 10 | 48 head            | £1553 | 1  |
| 1 heifer calf   | 26    | 5  |                    |       |    |
| 3 head          | £147  | 0  |                    |       |    |

Referring to the Kirkleavington sale on the 9th of May, 1850, we find the Earl of Ducie to have been the purchaser of six head. The prices for which these animals severally sold at Kirkleavington and at Tortworth are as follows:

## Prices at Kirkleavington, May 9, 1850.

|                           | £    | s. | d. |
|---------------------------|------|----|----|
| Duchess 55th .....        | 110  | 5  | 0  |
| Oxford 6th .....          | 131  | 5  | 0  |
| Duchess 59th .....        | 210  | 0  | 0  |
| Duchess 64th .....        | 162  | 15 | 0  |
| Oxford 11th .....         | 131  | 5  | 0  |
| Fourth Duke of York ..... | 210  | 0  | 0  |
| Total .....               | £955 | 10 | 0  |

## Prices at Tortworth. Aug. 24, 1853.

|                           | £     | s. | d. |
|---------------------------|-------|----|----|
| Duchess 55th .....        | 52    | 10 | 0  |
| Oxford 6th .....          | 215   | 0  | 0  |
| Duchess 59th .....        | 367   | 0  | 0  |
| Duchess 64th .....        | 630   | 0  | 0  |
| Oxford 11th .....         | 262   | 10 | 0  |
| Fourth Duke of York ..... | 625   | 0  | 0  |
| Total .....               | £2052 | 0  | 0  |

The produce of the foregoing, after becoming the property of his lordship were,—

|                          | £    | s. |                   | £    | s. |
|--------------------------|------|----|-------------------|------|----|
| 2 heifers sold for ..... | 935  | 0  | 1 bull calf ..... | 315  | 0  |
| 4 heifer calves .....    | 1249 | 10 |                   |      |    |
| 1 bull .....             | 632  | 10 | 8 head .....      | 3192 | 0  |

## EARL DUCIE'S SALE.

| Cows and Heifers.      |     |          | Cows and Heifers.      |     |            |
|------------------------|-----|----------|------------------------|-----|------------|
| yr                     | mo. | Gs.      | yr.                    | mo. | Gs.        |
| Bessy .....            | 13  | 6 .. 41  | Lucy .....             | 1   | 5 .. 40    |
| Stella .....           | 12  | 6 .. 35  | Hornet .....           | 1   | 4 .. 43    |
| Challenge .....        | 10  | 6 .. 44  | Duchess 67 .....       | 1   | 3 .. 350   |
| Duchess 55 .....       | 9   | 0 .. 50  | Parliament .....       | 1   | 2 .. 56    |
| Victoria .....         | 8   | 6 .. 44  | Oxford 15 .....        | 1   | 2 .. 200   |
| Princess Fairfax ..... | 8   | 0 .. 77  | Bibby .....            | 1   | 0 .. 61    |
| Notwich .....          | 7   | 6 .. 60  | Fride .....            | 0   | 11½ .. 165 |
| Chaff .....            | 7   | 6 .. 42  | Duchess 63 .....       | 0   | 11 .. 300  |
| Minstrel .....         | 7   | 6 .. 100 | Chance .....           | 0   | 7 .. 56    |
| Oxford 6 .....         | 6   | 6 .. 205 | Violet .....           | 0   | 7 .. 48    |
| Duchess 59 .....       | 5   | 6 .. 350 | Snowdrop .....         | 0   | 6 .. 120   |
| Mantula .....          | 5   | 6 .. 110 | Duchess 69 .....       | 0   | 5 .. 400   |
| Virginia .....         | 5   | 6 .. 75  | Lazzy .....            | 0   | 4 .. 81    |
| Pomp .....             | 5   | 6 .. 65  | Oxford 16 .....        | 0   | 3 .. 180   |
| Louisa .....           | 5   | 0 .. 75  | Duchess 70 .....       | 7   | wks. 310   |
| Beatrice .....         | 5   | 0 .. 87  | Parade .....           | 14  | days. 73   |
| Chaplet .....          | 4   | 6 .. 64  | Vanquish .....         | 13  | days. 30   |
| Victoria .....         | 4   | 0 .. 46  | Bulls and Calves.      |     |            |
| Horatio .....          | 4   | 0 .. 3   | D of Glocest r .....   | 3   | 0 .. 650   |
| Duchess 64 .....       | 4   | 0 .. 600 | 4th Duke of York ..... | 6   | 6 .. 500   |
| Oxford 11 .....        | 4   | 0 .. 260 | Cornwall .....         | 1   | 3 .. 61    |
| Florence .....         | 4   | 0 .. 62  | Uncle Tom .....        | 1   | 2 .. 37    |
| Fauna .....            | 3   | 6 .. 70  | Vampire .....          | 1   | 1 .. 120   |
| Mystic y .....         | 3   | 6 .. 100 | Franklin .....         | 0   | 10 .. 80   |
| Bodlice .....          | 3   | 0 .. 115 | Cheltenham .....       | 0   | 8 .. 125   |
| Flourish .....         | 3   | 0 .. 7   | Florian .....          | 0   | 8 .. 58    |
| Duchess 66 .....       | 3   | 0 .. 700 | 5th D. of Oxford ..... | 0   | 5½ .. 30½  |
| Victory .....          | 2   | 9 .. 80  | G. uester .....        | 0   | 4½ .. 150  |
| Chimz .....            | 2   | 7 .. 70  | Francisco .....        | 0   | 4 .. 100   |
| Finance .....          | 2   | 5 .. 90  | Norman .....           | 0   | 3½ .. 100  |
| China .....            | 1   | 8 .. 90  | Marquis .....          | 0   | 2 .. 75    |
| Bookin .....           | 1   | 6 .. 56  |                        |     |            |

## THE LATE CAPTAIN BARCLAY, OF URY, SCOTLAND.

This well-known character died recently at his residence at Ury. He was distinguished for his great success as a breeder and trainer of race and hunting horses, and sustained for a long series of years a first-rate herd of Short-horn Cattle. Indeed the immense improvements made in Britain during the present century in the breeding of horses and farm stock, were greatly aided by the Captain's good taste and judgment, and characteristic energy and perseverance. His exploits as a pedestrian are well known. He appears to have inherited most of his characteristic

qualities from his father; who is said to have walked, in an age of bad roads, from London to Ury, 510 miles, in ten successive days, and his ordinary pace was six miles an hour. In thirty years he improved 2,000 acres of arable land, and planted 1,500 acres of wood, an example that produced the best effects in the North of Scotland.

The deceased descended from an ancient and honorable family,—going back as far as the eleventh century;—the celebrated Robert Barclay, author of the “Apology for the Quakers,” was one of his ancestors. The following facts and incidents of his life, indicating his feats of extraordinary strength and endurance, abridged from the *Montreal Standard*, will be interesting to our readers:—

In June, 1801, he walked from Ury to Boroughbridge, in Yorkshire, a distance of 300 miles, in five oppressively hot days. The match for 5,000 guineas to perform 90 miles in 21½ hours excited great attention. In a preliminary trial he accomplished 110 miles at a rate equal to 135 miles in 24 hours, and he gained the 5,000 guinea match on 10th November, 1801, by an hour and eight minutes, without being excessively fatigued. His next feat was then one unprecedented, that of walking 1,000 miles in 1,000 successive hours. Believing that he could easily accomplish it, he did not go into regular training. Previous attempts had failed—the pedestrians giving in at the end of 15, 22, and 30 days, from over fatigue. Captain Barclay commenced his task at Newmarket on 1st June, at midnight, and finished it 42 days after, on 12th July, about three o'clock afternoon, amidst thousands of spectators. The pain he suffered during the journey was excessive; but, although he was so stiff that he had to be lifted after resting, his legs never swelled, and his appetite remained good during the whole period. About £100,000 depended on the match; but the most remarkable circumstance attending it was, that after a sleep of about seventeen hours when he had finished the journey, he was in perfect health and strength, and set off, five days after, for Walcheren. Only another pedestrian has surpassed Capt. Barclay's performance, but the report states that it well-nigh cost him his life. This was Richard Manks, a native of Warwickshire, who performed 1,000 miles in as many hours at Sheffield in 1850, commencing each mile at the commencement of each hour, whereas Captain Barclay's wager was to walk each mile within an hour, and permitted him to walk two miles consecutively, and to sleep about an hour and a half at a time. At the close of the performance, the Captain's rate of travelling was a mile in twenty minutes, while Manks required nearly the hour, fell asleep as he walked, or was only kept awake by bodily suffering.

More recently, Captain Barclay was connected with the well-known Defiance coach, on the box



of which he was frequently to be seen. Whatever he undertook he endeavored to accomplish in the best style; and this was evinced in the management of the *Defiance*, long the best appointed four-horse coach in Scotland.

In his declining years, his taste for agricultural pursuits revived—he devoted much time and money to the improvement of the breed of cattle and sheep—and the annual sale at Ury for many years drew together the most eminent agriculturists from all parts of the kingdom. By the proprietors and tenantry of Kincardineshire the deceased gentleman was held in high esteem. Sincere, humane, truthful and bold, he held in scorn everything that was dishonorable and oppressive; and his tongue or pen was not slow to express what his heart had conceived. With the exception of the paper on training to which we have referred, a small volume of travels in America, treating principally of Agriculture, and a few contributions to the newspapers, his literary talents were not much exercised; but his knowledge of books, and of the Greek and Latin classics, was considerable; and he had mixed too much with men of all classes not to possess an extensive knowledge of human nature.

#### COUNTRY FARMERS AND CITY TRADESMEN.

The following letter, addressed to the *New England Farmer*, is worth the serious consideration of those young folks in the country who feel tempted to forego the advantages of the really profitable and health-giving occupation of farming, for the apparent attractions of City or Town life:—

MR. EDITOR—I am one of that great multitude of farmers' boys, who, early imbibing the notion that farming is less profitable than most other kinds of business, learn a trade, and finally find themselves city mechanics. A grand good position to look back from, and which I have long wished some one of our class, more competent than myself, would improve for the benefit of our successors; for it seems that farmers' boys, and girls too, are still looking to the shops and stores of the city, as a refuge from the poverty of the farm.

On looking back from this stand-point upon my past experience and observation, the first conviction which occurs to my mind is, that farming is *more*, and other business is *less* profitable than they *seem* to be. I have lately received a letter from a brother, who not "taking to a trade" now owns a small farm. Alluding to my old notions of the unprofitableness of farming, and to the high prices I now pay in the city for all kinds of provisions, he says, in the familiar style of family correspondence:

"On looking at the amount and variety of articles consumed and worn out by farmers; the interest most of us pay when we first begin in the world; our carriage and harness; our clothing, food, &c., for ourselves and little ones, I think, there must be profit somewhere in farming, greater than you used to allow. Look into our butlery,

our clothes-press, our cellar, our barn, and pig-pen,—nothing to brag of, as you know,—but yet enough if all were put into a bill to make quite a sum. If farmers were to give their farms credit for rent and everything you pay money for, which their farms produce, they would need something of an income to foot the yearly bill—and would find out, I believe, that farming is not quite such a poor and unprofitable business as some of us think it to be."

Farmers handle but little money, and hence are apt to look upon the weekly wages of mechanics as large, which will barely supply a family with the necessaries of life. I recollect my feelings, when a boy, on hearing of a mechanic who received ten dollars a week in the city. I could hardly imagine what one man could do with so much money; or, when it was possible for others to put themselves in the way of getting such wages, anybody should be willing to stay and "gee-haw" oxen on a farm at fifty cents a day! Well, I left the farm, and have reached the goal of my boyish ambition. I am in Boston, with ten dollars a week!

But how much better off am I, after all, than most of my schoolmates are, who were compelled to work for twelve to fifteen dollars per month, while I was receiving thirty to forty? Little if any; and why? Because "circumstances alter cases." Before I left house I had twelve to fifteen dollars per month to pay for board, washing, mending, and other unavoidable incidentals—a very important item that farmer-boys seem never to take into account,—and then, when sick, my patcher's, apothecary's, boarding-house keeper's and washerwoman's bills were all made out on the ten-dollars-a-week system, and took off the dollars almost as fast as my pulse beat in a high fever. While the farmer-boy who works by the month is boarded, washed and mended, "in the bargain," and, if sick, is taken care of at the lowest figure, or carried home to be nursed by mother and sisters.

If the editor thinks the foregoing remarks worth publishing, I may take time to say something upon the relative advantages and trials of supporting a family upon a farm in the country, and on ten dollars a week in the city.

A CITY MECHANIC.

#### MARKETS, &c.

The high prices paid for flour and wheat at our last issue remains with but a very slight reduction. There appears to be but a small quantity of either in the country, but it will not be a great while before new wheat will make its appearance. There is no prospect of its reaching a much higher price, except a sudden speculative demand may for a few days increase the wants of the market. The crops generally are pretty good, and we think, on the whole, better than was expected in the beginning of the spring. Laborers appear to be the great want, Machinery is however being brought to the aid of the farmer, and there will be more in use the present season in Canada, than ever there was before.

## Literary and Miscellaneous.

### FAMILIAR CHEMISTRY.

BY MRS. M. F. H. THOMAS.

#### CHAPTER IV.

Having now glanced briefly at the elements, and combination of elements, which compose the visible world, the process of *germination* will next occupy our attention.

Plants are of two kinds—Oviparous and Viviparous. The first reproduce their kind by seed; the second by offshoots, or bulbs. The seed, like the egg of animals, is composed of a microscopic structure, called the *embryo*; and its proper food stored up to nourish it, till it becomes sufficiently developed to elaborate its own sustenance. The amount of the last, determines the bulk of the seed—the embryo of the sturdy oak, not differing, materially, in size, from the little mignonette. Folded up, in a point almost imperceptible to the naked eye, lies the vast foliage, and giant arms, of the sturdy oak.

"Each ravelled bud; fine film and fibre line,  
Traced with nice pencil on the small design,"  
—"And boundless forests slumber in a shell."

*Warmth, moisture, and oxygen*, are necessary to germination. The seed is composed mostly of carbon, and is dry and hard. The *pericarp* is sometimes succulent or juicy, as in the peach, apple, etc., in which case its early decay is usually necessary to free the seed, and enable it to find the necessary conditions of germination.—The absence of fluids, in seeds,—and consequently of changes which, in both the vegetable and animal economy, take place only by their influence,—enables us to preserve seeds for an almost unlimited period, if secure from moisture. We have accounts of some of the cereal grains being preserved for thousands of years. Seeds, if exposed to moisture without heat and air, will not germinate, however, but decay. Neither can heat or air, or both, produce germination without moisture. The three, combined, can only wake the life principle from its lethargy. Fluids permeate, soften, render its substance susceptible of change, while heat aids the union of the carbon with the oxygen of the air, thereby forming a sugary, starchy substance, which constitutes the proper food of the embryo. Hence, seeds bedded deeply in the earth, remain, sometimes, inert for ages; and then, when exposed to the air by being thrown up in ditching and other excavations, germinate immediately. Seeds, therefore, planted deeply, or in soils nearly impervious to air, germinate slowly, and uncertainly. They will

germinate upon the surface of the soil, or even upon cotton floating upon water, or in any other position where exposed to heat, air, and moisture; but better a short distance below the surface of the soil, as an equality of moisture is better preserved, and light is excluded. Light, though it does not prevent, retards and stints germination,—for an obvious reason. Plants in the light are inclined to evolve oxygen, by decomposing carbonic acid, and retaining the carbon. The opposite process is necessary in germination. The carbon is thrown off, as carbonic acid, and oxygen is retained. Plants, unlike animals, can elaborate their pabulum from its primary elements. By a process, undoubtedly merely chemical, as it has its counterpart in inorganic chemistry, the mere presence of the germ, causes the union of these elements into substances fitted for its nourishment. Therefore, if lime, or any other ingredient of vegetable structures, be lacking in the soil, they can be supplied in the elementary form. It is therefore a great aid in, if not absolutely necessary to, successful agriculture, to understand the chemical composition of the soil, and also of the various manures usually applied. Though heat is necessary to germination, a too high degree destroys the vitality of the germ. The maturing of grains consist in first inducing germination, and then destroying the vitality of the germs by increased heat, at a certain period. Grains treated in this manner, when macerated or soaked in water, produce a sweet liquid which is subject to fermentation. The process of fermenting liquors, or raising bread with yeast, is a process of germination. Yeast is a plant of the simplest order, consisting of single cells, which never attain any higher degree of development; but placed in favorable circumstances, propagate their kind with astonishing rapidity. How rapidly a few spoonfuls of yeast pervades and assimilates a large quantity of dough. The puffiness of the dough is caused by the carbonic acid evolved, as I before said, by the union of the oxygen of the air, with the carbon of the yeast, being retained by the tough *gluten* of the wheat. It is the absence of this principle (gluten) in corn meal, which prevents its ever assuming the spongy form of wheat dough. Mould is also a vegetation. Its germs are so widely diffused that the condition of their germination, alone, is necessary to develop them.

But to proceed with the process of germination. The embryo gradually enlarges, and emerges from the seed coatings in two parts. First the



*radicle*, or root, shoots down into the earth, then the plume, or stem, rises through the crust, and seeks the pure air and bright sunshine. The root, by its minute fibres, draws sustenance from the moist earth, and conveys it in proper vessels along the stem to the leaves to be exposed to the air, and thus finish the process of digestion begun in the radicles. Whatever be the position of the seed in the earth, the radicle and plume each seek their appropriate sphere, even though by doing so, they are obliged to describe an angle. Plants are divided into two classes, called *monocotyledons* and *dicotyledons*. The seeds of the first have but one lobe. The grains, and grass-like plants, are examples of this class, and are known by the sheath-like envelopes in which they emerge from the ground. The second have two seed lobes, and two leaves appear simultaneously above the ground. These first leaves are the cotyledons or seed lobes, swollen and succulent. They become green by exposure to light, and take on a new function. Whereas they before eliminated carbonic acid, it now constitutes their food: which they digest, furnishing the still feeble embryo with the carbon necessary for its growth. By-and-by the embryo attains sufficient strength to obtain its own nourishment, and then the seed-leaves wither away, and the new plant stands forth perfected. Monocotyledon plants grow by depositions in their centre, which press outward the old structures, rendering them very dense and hard, as in canes. The outside of the stem is usually very dense, the internal parts more porous, the porosity increasing towards the centre, which is usually occupied by a spongy pith. This class of plants seldom attain a large size, though they sometimes grow to a great height, as the palms of torrid zones.

The Dicotyledons grow by successive layers, formed, annually, around the stem, under the bark, where the cambium or true sap circulates. The juices imbibed by the roots are carried up through the *body* of the plant to the leaves, where they undergo a change by contact with the air, and are then returned or descend between the bark and wood. This is the true blood of the plant. From it are formed, not only a new layer of both wood and bark, but the stems, leaves, and flowers, also. The age of plants can be pretty accurately determined by counting these layers near the root. Whenever, from any circumstance, this cambium is obstructed in its course, and accumulates, the buds are formed, most usually in the angles of the branches, or foot stalks of the leaves. At first, in early spring, the foliage puts

forth rapidly. The first faint tinge of green upon the black forests is quickly succeeded by its full glory of many hued emerald. But in midsummer, Nature seems to rest: and maturity approaches slowly. Then are being formed the buds in which lies wrapped all the vast foliage, and new groups, of the ensuing year, at the bottom of, or within the leaf stalks, of the present. So Nature,—

"Ere one flowery season dies,  
Designs the blooming wonders of the next."

Then, too, the annual plants, having attained maturity, are engaged in perfecting the organs of fructification,—“each plant bearing seed after its kind.”

BROOKLIN, June 13, 1854.

#### BAD AIR.

Bad air is a slow poison. That is the trouble. People go on taking it day after day into their lungs, and night after night. They grow pale, their lungs suffer, the circulation is languid, they take colds readily, the chest, the stomach, the skin, become disordered, and a host of chronic diseases attack them. A little carbonic acid taken every day does not kill a man. It is almost a pity it don't! If a red-hot stove destroyed instantly one man in every town daily for a week, there might be some salvation for the nation. If, instead of fainting away in crowded and badly-ventilated public assemblies, people occasionally died outright in convulsions, the authorities would take the matter in hand, and make it penal for owners of such buildings to open them for public use without attending to the proper condition or the preservation of health. When a thing is only a slow poison, the age is too much in a hurry to attend to it.

In such cases we must, wake up the public lethargy by facts. And here is one of them. We have before us the history of the Dublin Lying-in Hospital. Some years ago this building, erected in the common way, without the slightest regard to ventilation, was found to exhibit a great amount of mortality among the young children born there. In four successive years—healthy seasons too—out of 7,250 infants brought forth in the hospital, 2,544 died within the fortnight after birth, of convulsions, or what the nurses call nine-day fits. These children foamed at the mouth; the faces swelled and assumed a purplish hue, as though they were choking. These last circumstances suggested to the physician that a deficiency of wholesome air was connected with the great mortality. Air-pipes were immediately contrived; the rooms were ventilated. What was the result?—That in the three following years, out of 5,358 children born in that hospital, only 165 died; in the very same rooms too, where, according to the old ratio before the ventilation took place, the number of deaths to the number of children would have been 1,682. To save the lives of more than 1,000 human beings in three years, by putting in a few pipes! Can any one say there is nothing in ventilation, after such facts as these?

## TREATMENT FOR CONSUMPTIVES.

The following valuable remarks on the treatment for Consumptives people are from the pen of Mr. N. P. Willis, the popular American writer.

They show, in as far as his testimony goes, that those who live in the Country, lead an active and vigorous life and breathing plenty of fresh and pure air, have little to fear from this so much dreaded disease, while other similar testimony has shown that even those who were supposed to be far advanced in Consumption, have recovered their health by accustoming themselves gradually to out door exercise in the open Country, together with observing regular hours, paying a proper regard to diet &c.

After premising, among other things, that "the patient who troubles himself the least about his disease, (or who leaves it entirely to his doctor,) but who perseveringly *out votes* it by the high condition of the other parts of his system, is the likeliest to recover"—that two persons are seldom the subjects for precisely the same medical treatment, or diseased in precisely the same locality—that our friends, the physicians, are better geographers than we, as to where the healing is wanted—though they too often take it for granted that the patient keeps the rest of his body in proper training for recovery—Mr. WILLIS continues: "I went to the Tropics, as a last hope, to cure a chronic cough and blood raising, which had brought me to the borders of the grave. I found a climate in which it is hard to be unhappy about anything—charming to live at all—easy to die. (At least those who were sure of dying, and did die, and in whose inseparable company I thought I was, were social and joyous to the last.) The atmosphere of that Eden-latitude, however is but a painstilling opiate, while the equator might be called a kitchen-range for a *Sardanapalus*, and the Antilles are but tables loaded with luxuries. The Caribbean sea is the kingdom of the moment. The past and the future are its Arctic and Antarctic—unthought of except by desperate explorers. Hither are sent invalids, with weakened resolution, to make a pilgrimage with prescription and prudence. You may see by the book I have just published, (*Health Trip to the Tropics*), with what complete forgetfulness of care or caution I made one of an invalid company for months.

"Was anybody going to shut me up in a bedroom with such nights out of doors? Was anybody going to be dull and abstinent with such merry people, and a French breakfast or tempting dinner on the table?

"I reached home in July, thoroughly prostrated, and in the opinion of one or two physicians, a hopeless case. Coughing almost the whole of every night, and raising blood as fast as my system could make it. I had no rest and no strength. I lingered through the summer, and as the autumn came on, and the winter was to be faced, I sat down and took a fair look at the probabilities. With the details of this troubled council of war

I will not detain you; but, after an unflinching self-examination, I came to the conclusion that I was, myself the careless and indolent neutralizer of the medicines which had failed to cure me—that one wrong morsel of food, or one day's partially neglected exercise, might put back a week's healing—and that, by slight omissions of attention, occasional breaking of regimen, and much too effeminate habits; I was untrue to the trust which GRAY, my friend and physician, had made the ground of his prescriptions.—And to a minutely persevering change in the comparative trifles, I owe, I believe, my restoration to health. There was not a day of the succeeding winter, however cold or wet, in which I did not ride eight or ten miles on horseback. With five or six men, I was for most of the remaining hours of the day, out of doors, laboring at the roads and cleanings of my present home, The cottage of Idlewild was then unbuilt, and the neighboring farm-house, where we boarded, was of course indifferently warmed; but by suffering no state of the thermometer to interrupt the morning cold bath, and the previous friction with flesh-brushes, which makes the water as agreeable as in summer, I soon became comparatively independent of the temperature in doors, as my horse and axe made me independent of it when out of doors. With proper clothing to resist cold or wet, I found, to my surprise, that there was no such thing as disagreeable weather to be felt in the saddle; and when a drive in a wagon or carriage would have intolerably irritated my cough, I could be all day in the woods with an axe, my lungs as quiet as a child's.

"There are so few invalids who are invariably and conscientiously *untemptable* by those deadly domestic enemies, *sweetmeats, pastry* and *gravies*, that the usual civilities at a meal are very like being politely assisted to the grave. The care and nurture of the *skin* is a matter worth some studying; for it is capable not only of being negatively healthy, but positively luxurious in its actions and sensations—as every well groomed horse knows better than most men. The American liver has a hard struggle against the greasy cookery of our happy country. The impoverished blood of the invalid sometimes requires a "glass of wine for one's stomach's sake," recommended by the Apostle. Just sleep enough, and just clothing enough, are important adjustments, requiring more thought and care than are usually given to them. For a little philosophy in your habitual posture as you sit in your chair, your lungs would be very much obliged to you. An analysis of the air we live and sleep in, would be well worth looking into occasionally. And there are two things that turn sour in a man without constant and sufficient occupation upon something besides the domestic circle—the temper and the ambition."

Mr. W. expresses the fear that he cannot sufficiently convey to his correspondent his own sense of the importance of a *horse* to an invalid. "In my well weighed opinion," says Mr. W., "ten miles a day in the saddle, would cure more desperate cases (particularly of consumption,) than all the changes of climate and all the medicine in the world."



## Poetry.

☛ The following sweet and dainty poem is from the almost enchanted pen of BENJ. F. TAYLOR, the author of "January and June." We have rarely been the almoner of so delightful a gift, and we know that our readers—all of whom are his admirers—will join us in cordially thanking the pure-hearted Poet for his offering.—*Buffalo Express*.

### BEAUTIFUL MAY.

Oh! have you not seen, on some morning in June,  
When the flowers were in tears, and the forest in tune,  
And the billows of dawn broke bright on the air,  
On the breast of the brightest a star clinging there?  
Some *Sentinel Star*, not ready to set,  
Forgetting to wane, and watching there yet?  
How you gazed on that vision of beauty awhile!  
How it wavered, till won by the light of God's smile;  
How it passed through the portals of pearl, like a bride,  
How it paled as it passed, and the *MORNING STAR* died!  
The sky was all blushes, the world was all bliss  
And the prayer of your heart; "be my ending like this."

So my beautiful MAY passed away from Life's Even,  
So the blush of her being was blended with Heaven!  
So the bird of my bosom fluttered up to the dawn  
Ah! a widow was open, my darling was gone  
A truant from time, from tears and from sin  
For the Angel on watch took the wanderer in!  
When she warbles to me the "New Song" that she sings,  
I shall know her again notwithstanding her wings  
By those eyes full of Heaven—by the light on her hair  
And the smile she wore here, she will surely wear there

### THE SEASONS.

FROM THE GERMAN.

Hay and corn and buds and flowers,  
Snow and ice and fruit and wine.—  
Suns and Seasons, sleets and showers,  
Bring, in turn, these gifts divine.  
Spring blows, Summer glows,  
Autumn reaps, Winter keeps;  
Spring prepares, Summer provides,  
Autumn hoards, and Winter hides.  
Come, then, friends, their praises sound:  
Summer, Autumn, Winter, Spring,  
As they run their yearly round,  
Each in turn with gladness sing!  
Time drops blessings as he flies—  
Time makes ripe and Time makes wise.

## Reviews, &c.

*The Canadian Journal and Record of the Proceedings of the Canadian Institute*—Maclear & Co, Toronto: May 1854.

This monthly scientific Journal continues to be ably Edited and supported by numerous contributors; and affords substantial proof of the progress of the valuable society of which it is the exponent. The present number contains among its original papers, a very interesting description of Vesuvius and its neighbourhood, by the Rev. Dr. Scadding of Toronto; on the establishment of simultaneous Meteorological observations throughout British America, by Major R. Lachlan, of Montreal; on the intrusion of the Germanic Races on the area of the older Celtic races of Europe, by Daniel Wilson, L.L.D., Professor of History, &c., in University College, Toronto; on some genera and species of Cystids from the Trenton Limestone, by E. Billings, of Bytown; Sykes' Steam Hammer with an engraving, &c.

*The Anglo-American Magazine*—Toronto: Maclear & Co., June 1855.

An excellent number, embellished by four well executed engravings, containing several interesting articles in addition to the continuation of those more systematic and substantial papers which have given already to this purely Colonial production, a respectable position among the periodical literature of the age. The Editor's Shanty, is as usual, full of interest and kindly humour, and by no means devoid of such matters of practical utility as belong to this utilitarian every day world. The present number completes the 4th vol., affording a good opportunity for new subscribers to commence with the part for July. The work can be forwarded to subscribers at any distance by post, or by Messrs. Maclear's travelling agents. Price \$3 per annum.

*Norton's Literary Gazette*.—Published fortnightly at \$2 a year.—New York: C. B. Norton.

The recent numbers of this periodical fully sustain the high opinion we formerly expressed. It is a valuable and instructive paper to the general reader, which to the man of science or letter, the clergyman, schoolmaster, and indeed to all engaged or interested in the purchase of books, or the formation of libraries, it is quite an essential. Besides a full list of all new works published in Europe and the United States, with sober and impartial critiques on many of them, it registers the proceedings of literature and scientific societies, and continues more written original papers, illustrated by engravings when necessary, on literary subjects.—We are glad to find that this well conducted periodical is gaining a circulation in Canada, indicating thereby progress of taste and the diffusion of literature among us.

*Annual Report of the Normal, Model and Common Schools, in Upper Canada, for 1854*. Quebec, printed by order of the Legislative Assembly by John Lovell, Mountain Street, 1854.

This voluminous Report on the state and progress of Common Schools in Upper Canada by the Chief Superintendent of Education, affords most pleasing and satisfactory evidence of the rapid advance which a sound and unsectarian education is making through every part of this extensive Province. A good secular education, based upon the great moral principles of a common christianity, is the only system that can be brought into operation and sustained in a community, separated into different sects and parties, like our own; and the Report before us shews that much more has already been accomplished than a few years since, could have been reasonably anticipated. We shall probably refer again to some portions of this valuable and important document in a future number.

*Chamber's Journal*,—Part 4—May 1854. W. & R. Chambers, London & Edinburgh; A. H. Armour & Co., Toronto; P. Sinclair, Quebec; J. Armour, Montreal; John Duff, Kingston; A. Bryson, Bytown; W. Allan Perth; J. Lesslie, Toronto and Dundas; R. R. Smiley, J. M. Graham, London, C. W.

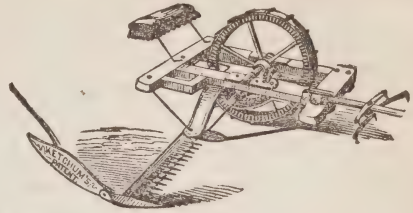
We have received from A. H. Armour & Co., of this city, the fourth part of this highly popular and instructive miscellany, which its talented and experienced conductors seem determined should continue, as heretofore, to hold the van in this important department of the world's literature. The present part fully sustains the high opinion we expressed of its predecessors. All classes of readers may find in every page of Chambers something to amuse or instruct. The preparation of each number evinces the exercise of correct taste and sound judgment, combined with much diligence and labour.—We have, at present, no room for extracts; a circumstance less to be regretted as the original edition of the work itself can be so readily produced as it is published, from the Booksellers mentioned at the head of this notice, at the very low price of ten shillings per annum.—The present part contains no less than three of Mr. Chambers's excellent series of papers on "Things as they are in America," treating of Niagara, Toronto, Hamilton, London and the peninsula of Canada West. Although Mr. Chambers's stay in the Province was but short, he evidently made the most of his opportunities, and his paper will doubtless be read with equal interest on both sides of the Atlantic. We can safely recommend this Journal as among the very best publications of the kind, that should receive a welcome into every well ordered family; particularly in these days when trashy publications so much abound.

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ADVERTISEMENTS.

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THIS CELEBRATED MACHINE stands without a rival, as the only Machine that ever worked in all kinds of Grass successfully. This Machine was thoroughly tested last year ("and in all kinds of Grass") and gave entire satisfaction to the FARMERS as the only Mower that would do its work well on uneven or rough land, or where there are dead furrows. Each Machine can be thrown out or in gear by changing a wedge at the ends of the shaft of the large or power wheel. Oil cups are on each box which, by the use of cotton, will hold oil for a long time, and protect the bearing from dust and grit, &c. We have spared no pains in obtaining the latest improvements to make this Machine of public favor, and take this occasion to caution Farmers against buying untried Mowers, as was the case last year, which will cause loss and disappointment.—This Machine is warranted to cut and spread, of any kind of Grass, from ten to fifteen acres per day, with one span of horses and driver, and do its work as well as by the best of Mowers with the hand scythe. We received the first Prize on the above Mower, at the Provincial Fair, at Hamilton, last year.

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Price of Reaper £30. "This Reaper took the first Prize at the Provincial Fair, held at Hamilton, last Fall." They are warranted to cut from ten to fifteen acres of any kind of Grain per day, with one span of horses and driver,—man to throw off the Grain,—and also do its work better than is generally done with the hand cradle,

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THE PROPERTY OF MR. RALPH WADE, JR.,  
NEAR COBOURG, C. W.,

**W**ILL serve Cows this season, 1854; thorough bred Cows at Ten Pounds, others at Two Pounds Ten Shillings each P. P. Calved March, 1853, bred by J. M. Hopper, Esq., Middlesbro'-on-Tees, Yorkshire, England; got by Belleville, (6778), d. Polly, by Belleville (6778). g. d. Madeline, by Newham (4503), g. g. d. Ganymede, by Uptaker (5334), g. g. d. Garland, by Matchem (2281), g. g. g. d. by Fitz Remus (2025), g. g. g. g. d. by Cato (119), g. g. g. g. d. by Whitworth (695), g. g. g. g. g. d. bought of Mr. Mason, of Chilton.

**BELLEVILLE.**

(Vide Coate's Hard Book, Vol. 6, p. 18, No. 6778)

*The property of Mr. John Mason Hopper, will serve Cows at Newham Grange, near Middlesbro'-on-Tees, at 12 Guineas each Cow.*

In the year 1846, Belleville (sire of Sir Charles Napier) won the first Prize in the first Class, at the meeting of R. A. Society of England, at Newcastle; the first Prize in the first Class, at the meeting of the Yorkshire Agricultural Society held at Wakefield; the first Prize in the first Class, of the Royal Irish Improvement Society, held at Limerick, and the Challenge Cup of 100 Guineas' value, as the best Animal in the Yard, with one Gold and two Silver Medals; also, the first Prize in the first Class, at the meeting of the Highland Society of Scotland, held at Inverness, and the Silver Medal for the Breeder; likewise in 1848, the first Premium at the Durham Agricultural Society's Show, held at Darlington; and in 1850, at the meeting of the Highland and Agricultural Society, held at Glasgow, he won the sweepstakes of 2 guineas each, with 25 added by the country, as the best bull of any age, open to England, Ireland, and Scotland, beating nineteen others.

**CHALLENGE.****\$1,000 to \$4,000 a Side!**

Or in Friendly Competition.

**I**MPORTED "YOUNG LION" Within one Month after his Season is over (due notice being given), is open to

**WALK OR TROT 5 MILES AND UPWARDS.**

Against any Stallion, Gelding or Mare, of his weight or more, in Canada or in the United States, imported or otherwise, and as so few Horses can be found to weigh with him, any Horse weighing within 250 lbs. of his weight will be allowed to compete.

—ALSO—

At the same time, he will be open to Trot his Mile in less than **FOUR MINUTES**, in or out of Harness.

—ALSO—

At the same time, he will be open to draw any weight from **Two Tons** and upwards, from 5 Miles to 100 and return unladen in the shortest space of time, against any Stallion, Gelding or Mare, of any class, size or weight, either in Canada or the United States, imported or otherwise.

—ALSO—

For Superiority of Action against any Horse of his Class wherever he can be found.

One Judge to be chosen from among the veterinaries of New York, one from Montreal and one from Toronto, whose services are to be paid for by the Winner.

The Trials to take place in the vicinity of Toronto; and all travelling expenses to be allowed to the Owner of any Horse that may compete coming from a distance.

**W. B. CREW.**

Toronto, May 27th, 1854.

6-6-m.

**PRIZE SCHOOL BOOKS.**

**T**HE Subscriber obtained Diplomas at the Provincial Exhibitions held at Hamilton and Montreal in 1853, for "the Best Collection of School Books, printed and bound in Canada, for the use of Common and Grammar Schools." Among these books will be found

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**HEW RAMSAY,***St. Francis Xavier St.*

Montreal, April 28, 1854.

6-2 m

THE

**CANADIAN AGRICULTURIST,**

**E**DITED by G. BUCKLAND, Secretary of the Board of Agriculture, assisted by Mr. H. Thomson and the Proprietor. It is published on the 1st of each month by the Proprietor, William McDougall at his Office, corner of Yonge and Adelaide Streets.

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VOL. VI.

TORONTO, AUGUST, 1854.

No. 8.

## Reports, Discussions, &c.

### TOWNSHIP OF HAMILTON FARMERS' CLUB.

At a meeting of the Township of Hamilton Farmers' Club held at Cobourg, on May 27th, the subject for discussion was the preparation of Summer Fallows, which Mr. Phillips introduced by the following remarks:—

He said Summer fallow might be divided into two classes, namely—a naked summer fallow, and a green crop summer fallow. Some thought that naked summer fallows were unprofitable and might be done away with altogether, and perhaps so they might on low lying land that was not adapted to the growth of fall wheat, but where that was grown extensively he believed they could not be dispensed with. In making a naked summer fallow he would plough the land the first time whenever he found it most convenient in the fall, or in the spring, but be sure to have it done the first time before the end of May; he would always prefer to plough his fallows four times, and if the land was dirty, five times; he would plough rather light for the first and second times, but when he came to plough his fallow the third time in August he would put in the plough as deep as he could, the deeper the better; between the ploughing he would use the cultivator so that every green weed might be kept down; he thought the oftener a fallow was ploughed and cultivated the better; he believed that fall wheat could not be grown successfully without a bare fallow. The other and perhaps the more profitable one for this neighborhood was a green crop fallow: under this he included Potatoes, Turnips, Carrots, Indian Corn, and perhaps he might also include Peas.

In preparing land for green crops he would always plough as soon after harvest as possible, say in September; when land was manured in the fall (which was best for such roots as Carrots that you could not manure in the drill in the

spring) he would plough down the stubble, and manure as deep as his team would admit; when the land was ploughed early in the fall with a deep furrow it tended to make the land work up fine in the spring, which it always ought to do for green crops, as when fine it greatly lessened the labour of horing and facilitated the cleaning of the land and increased your chance for a good crop of roots and likewise left the land in fine condition for a crop of spring Wheat or Barley after the roots were taken off. Some green crops, such as turnips, might be profitably manured with fresh manure in the spring; but he did not think it necessary to speak particularly about manure, as every farmer ought to make and apply as much of it as possible. Where the land was clean and rich, Peas might answer very well for a preparation for fall wheat (especially the early varieties); he had seen sometimes excellent crops of wheat after peas, but he saw all our most successful wheat growers place their greatest dependence on their summer fallows, and on all flat lying land he would prefer sowing spring wheat, as there was time in the fall to prepare the land properly for it. With these remarks he would sit down knowing that those present could correct him in anything he had omitted or said amiss.

Mr. BOURN thought if we could do away with naked summer fallows altogether it would be best, though he believed that on stiff clay land they could be dispensed with, but on light land he would prefer sowing wheat after a green crop, or peas, or best of all after a crop of clover. When he could get a good catch of clover he would take one crop of hay and the next spring he would allow the clover to grow till it was pretty rank, then when ready to plough he would turn in all the beasts of the farm to tread it so that he could flatten it well down, and he would think himself pretty sure of a good crop of wheat.

Mr. WM. BROWN, JR, thought we could not clean the land properly without summer fallows, as green crops would be found very expensive to cultivate on a large scale, besides should there be any stones or roots on the land you had a



chance when summer fallowing it to clean them off, and that on the whole the most profitable way for fall wheat was to summer fallow.

MR. MASSON said, he did not like naked summer fallow at all; he thought that on stony and stumpy land they must summer fallow so that they could get them cleared up, but that might be called *making land*, but on land that was once fairly cleared up he thought here should not be a summer fallow in twenty years; he thought that early peas sown in June made a fine summer fallow as they would be off the ground in about six weeks, so that you could plough the land once in the fall and then in the spring before the peas were sown and then once after the peas, and the land was ready for wheat; but should the land be flat he would rather sow spring wheat as he believed that taking one year with another and making allowance for the seasons, that fall wheat was killed out in winter and rusted, that spring wheat was as profitable as it; he thought that to plough land for peas as he had described would kill thistles as well as a fallow; he thought that a bare fallow scourged the soil very severely during the excessive heats of July and August.

MR. DIXON said, he thought that for fall wheat summer fallows were best—but if he could get a crop of wheat after peas he would prefer them as the two crops would be more profitable than one.

MR. R. BROWN said, that it depended a great deal on the soil as some land did best with a bare summer fallow, and where you had large quantities of land to work it was hardly possible to keep it clean without fallows unless that land was well kept in clever.

MR. W. M. RODDICK said, that he agreed pretty much with what Mr. Phillips had said, that rather new and rough or stoney land could not be cleared up without naked summer fallow, but that as soon as land was once fairly cleared up fallows might be dispensed with and green crops take their place, and that land could be kept clean by following up the green crop with clover; he would plough his land in the fall for green crops and the deeper the better, he had used the subsoil plough a good deal in the fall with very beneficial results; where land was very dirty it was best to summer fallow as it could be easier and better cleared that way than with a green crop.

MR. BALL said, that if land was clear he would put on some green crop, but where the land was dirty summer fallowing it was the easiest and most effectual method of cleaning it.

MR. ALCORN said, that after the many excellent practical remarks they had heard from Mr. Phillips and others, he would not say much in the way of summing up. On land that was well adapted to the growth of fall wheat, he thought on the whole that naked summer fallows were the most profitable for the farmer, and kept the land in the best order; he saw that our most successful growers of fall wheat put most dependence upon their summer fallows though he did occasionally see a good crop of fall wheat after peas, yet with him wheat never came away well after peas. As such level low land as he farmed was not suitable for fall wheat he generally grew spring wheat; he grew as many roots as he could

and always sowed wheat after them, he likewise grew it after peas but as he could not grow as many roots and peas, as he wanted ground for wheat, he had been in the habit of sowing spring wheat rather extensively after hay, he ploughed the land with a rather light furrow as soon as he got off his hay, then he cross ploughed the land as soon after harvest as he found convenient applying manure then if he had any, he then ridged up the land well before the frost set in, taking care to open up all the water furrows where required, and keep the land dry as possible, he then sowed the wheat in the spring without further preparation, but should the ground be *baked* he would go over it with a cultivator before sowing, following this method he had excellent crops of spring wheat, and he had seen some of his neighbors follow the same plan very successfully. In this neighborhood there is not one farmer in twenty that can cultivate as much land in roots as he wants for spring wheat so that we are under the necessity of trying it after other crops, and he had always had better success with it after hay than after any other crop.

#### MACHINERY IN FARMING—ITS ABSOLUTE NECESSITY.

It is not enough that farmers avail themselves of all the advantages which chemistry affords in its application to their art; it is not enough that they learn how to save as much as possible of the manures made on their premises, and the best methods of applying these and also purchased specific manures; it is not enough that they know at what seasons and to what depths their soils should be cultivated. They must perform as many of the operations of farming by machinery as machinery can be made to perform to advantage.

There is no other way in which agriculture can keep pace in respectability, pleasure and profit, with other arts. Without this expedient it will be outstripped by them, and sink steadily in comparative rank.

By machinery, as we use the word here, we mean all mechanical contrivances which can be substituted for manual labor, and combined with manual labor so as greatly to increase its productivity.

And the policy which we recommend includes also animal labor, and as a more powerful co-operator with it.

So far as a horse or an ox can be made to do the work of five men, the horse or the ox earns the net product of five men's labor for the employer. If one man cultivates as much corn, and cultivates it well, with one horse, attached to a cultivator, as his neighbor cultivates with ten hoes in the hands of ten men, it is easy to see which of the two is travelling the fastest on the road to wealth.

So in cutting grass, in planting and harvesting grain, in shelling corn, and in various other operations of the farm, machines can do the work for a small percentage of the cost of manual labor.—*Mr Makin's Courier.*

## Communications.

### CORRECTION RELATIVE TO IMPORTED CATTLE.

PORT HOPE, July 14, 1854.

SIR,—I shall feel obliged by your correcting in the next number of the *Agriculturist* a mistake made in the July publication under the head of "Importation of Pure Breed Stock." You state that the "Sarah Sands" brought out to Portland forty sheep, two pigs, and one Durham bull, for Mr. Dickinson, of Port Hope. Of the number you mention, twenty of the sheep and pigs belonged to me, while the bull was one I purchased for Mr. R. Wade, jr., at the same time. I purchased a bull and two heifers for Messrs. Hungerford and Brodie, N.Y., the whole of whose stock of sheep and Durham cattle have been imported by me.

I remain, sir,

Your obt. servant,

C. A. JORDISON.

### PROPERTIES OF CHARCOAL.

[The following is from an interesting article, by J. Stenhouse, F. R. S., in the *Journal of the Society of Arts*, London:]

My attention was particularly drawn to the importance of charcoal as a disinfecting agent, by my friend, John Turnbull, Esq., of Glasgow, Scotland, the well-known extensive chemical manufacturer. Mr. Turnbull, about nine months ago, placed the bodies of two dogs in a wooden box, on a layer of charcoal powder a few inches in depth, and covered them over with a quantity of the same material. Though the box was quite open and kept in his laboratory, no effluvia was ever perceptible; and on examining the bodies of the animals, at the end of six months, scarcely anything remained of them except the bones. Mr. Turnbull sent me a portion of the charcoal powder which had been most closely in contact with the bodies of the dogs. I submitted it for examination to one of my pupils, Mr. Turner, who found it contained comparatively little ammonia, not a trace of sulphurated hydrogen, but very appreciable quantities of nitric sulphuric acids, with acid phosphate of lime.

Mr. Turner subsequently, about three months ago, buried two rats in about two inches of charcoal powder, and a few days afterward the body of a full grown cat was similarly treated. Though the bodies of these animals are now in a highly putrid state, not the slightest odor is perceptible in the laboratory.

From this short statement of facts, the utility of charcoal powder as a means of preventing noxious effluvia from church yards, and from dead bodies in other situations, such as on board a ship, is sufficiently evident. Covering a church-yard to the depth of from two or three inches, with coarsely powdered charcoal, would prevent any putrid exhalations ever finding

their way into the atmosphere. Charcoal powder, also, greatly favors the rapid decomposition of the dead bodies with which it is in contact, so that in the course of six or eight months, little is left except the bones.

In all the modern systems of chemistry, such, for instance, as the last edition of Turner's "Elements," charcoal is described as possessing anti-septic properties, while the very reverse is the fact. Common salt, nitre, corrosive sublimate, arsenious acid, alcohol, camphor, creosote, and most essential oils, are certainly antiseptic substances, and therefore retard the decay of animal and vegetable matters. Charcoal, on the contrary, as we have just seen, greatly facilitates the oxydation, and consequently the decomposition, of any organic substances with which it is in contact. It is, therefore, the very opposite of an antiseptic.

### DISINFECTING OF PUTRID, NOXIOUS GASES.

A simple, cheap, and easy way of disinfecting putrid, noxious, fœtid and mephitic gases, and putrid animal matter, may be accomplished by the free use of soda ash and quick lime. Dissolve twenty-five pounds of soda ash in five buckets of boiling hot water, and while hot shake twenty-five pounds of quick lime, and as soon as slaked, (which if the lime is good, will not exceed five minutes,) mix the fresh slaked lime while hot with the solution of soda ash, stirring it thoroughly for five minutes, by which time the lime will have taken up the carbonic acid of the soda ash; then pour the hot mixture into the privy vault, and it will in a few hours convert the impure and fœtid gases into ammonia, and entirely divest the premises of any unpleasant effluvia, and render the atmosphere perfectly salubrious and healthy. Soda ash of eighty per cent free alkali is sold at the soap houses at three dollars per hundred pounds, and Athens lime can be bought by the barrel at seventy-five cents the cask.

Every practical chemist knows that putrid animal matter can be converted into ammonia by the mixture (in a heated state) with caustic alkali. Such is the process, and such the result in the case.

In large vaults a greater quantity than twenty-five pounds is required; the quantity should be increased in proportion to the size of the vault.

The use of one hundred pounds of soda ash per annum, in a vault prepared and used as directed above, will prevent accumulation, and render the services of a scavenger wholly unnecessary.

Bilge water may be purified by the same process.

This preparation is more economical than chlorine of lime—is fifty times more efficacious, and ten thousand times more healthful.

I have used this preparation for more than twenty years, with the most complete success.—*New York Courier.*



## Horticulture.

### LATE SOWN VEGETABLES.

Some of the greatest delicacies for table use may be obtained from quite late sowings. We can speak most positively in regard to turnips. Both the round and the flat turnip may be sown at any time in July or August, and we have known it come to considerable maturity in a season in which there were no early frosts, when sown in the first week of September. Special pains should be taken to enrich the soil, for in this way we secure two objects—the more rapid growth of the plant, and a sweeter and more tender vegetable. We suppose it is generally known that the more rapid the growth of this and several other vegetables, the more mild and tender they are to the taste. Cabbages, onions, radishes, squashes, cauliflower, are all much more delicate in flavour, and agreeable to the palate when grown freely and rapidly, than when their growth is stunted or slow. Cucumbers and celery may also be added to the above named, as being much milder when grown rapidly than when of slow growth. Some of these may be raised late in the season, as well as turnips, so as to supply the table with the delicacies of spring and summer until quite late in the fall and winter.

By the end of July and in the course of August, there will be vacant places in the garden and field, which it would be good economy to sow with turnips. There will be at all events, the pea and early potato ground; there and other such patches may be sown with round or even flat turnip, and thereby, we will be making provision both for our family and our stock. What we do not use for the table will be well relished by our cattle; and cows which have a tolerable supply, will not dry up so early as cows that have no green feed.—*Country Gentleman*.

### DISEASE AMONG CUCUMBERS AND MELONS.

Disease appears to be very common again this year amongst Cucumbers and Melons, assuming rather different forms, but ending equally in the distortion and decay of the fruit, and ultimately, in many cases, in the destruction of the plants themselves. In some instances, indeed, the plants show symptoms of disease from their earliest stage of growth. One of the most serious cases which has yet fallen within our notice has just been communicated from the garden of Lord Delaware, in which the greater part of the tissues present a peculiar transparent aspect, accompanied for the most part by chlorosis. Little elevated specks gradually become distinguished from the rest of the tissue, and at length burst; gum is poured out, the superficial tissues die, and the taint is soon communicated to the whole plant.—As regards the cause, it is as obscure as ever.—The atmospheric conditions of the present year have indeed been very unfavorable for such plants, and might well induce a gouty state, espe-

cially where there was a previous tendency to disease, but it is impossible to assert with any degree of certainty that the disease has been produced under such influences. The fact is that where disease has once been generated the taint remains through many generations. It is very generally admitted that as regards the maladies to which the human frame is subject, disease has been greatly modified since the invasion of the influenza of 1837, and the subsequent cholera of 1842: and those whose experience reaches beyond those dates, for the most part readily admit that the treatment of disease has as consequence of this modification undergone great alterations. If this notice be applied to the vegetable world, we may perhaps learn a useful lesson.—The most probable method of combatting the malady in question, which appears to admit of little relief when it is once established, will be to fall back upon seed which has produced before its first general invasion, which it is often possible to do, as the seeds of such plants are amongst those which retain their vitality the longest, and it is the practice of many gardeners to retain the seeds of good varieties for years. But if this is to be done with any chance of success, all recent seed must be strictly excluded, for there is no knowing what a powerful influence the slightest cross of a diseased stalk may have. The pollen of a Pea will affect the color of the seeds, even in the first year, so as to make it impossible to recognize the variety from the seed, and in like manner very powerful modifications of the tissue may be effected, even before the hybridising power has given rise to a new form. In the absence of all knowledge as to any other material relief, the hint above given may possibly prove useful, and there are many other cases to which the principle may be applied.—*Gardiner's Chronicle*.

### JAPANESE GARDENS.

The gardeners of Japan display the most astonishing art. The plum tree, which is a great favorite, is so trained and cultivated that the blossoms are as big as those of dahlias. Their great triumph, however, is to bring both plants and trees into the compass of the little garden attached to the houses in the cities. With this view, they have gradually succeeded in dwarfing the fig, plum and cherry trees, and the vine, to a stature so diminutive as scarcely to be credited by an European; and yet these dwarf trees are covered with blossoms and leaves. Some of the gardens resemble pictures in which nature is skilfully modelled in miniature—but it is living nature! Meylon, whose work on Japan was published at Amsterdam, in 1830, states that in 1828, the Dutch agent of commerce at Nagasaki, was offered “a snuff-box, one inch in thickness, and three inches high, in which grew a fig tree, a bamboo, and a plum tree in bloom.”

Cedar chests are best to keep flannels, for cloth moths are never found in them. Red cedar chips are good to keep in drawers, wardrobes, closets, trunks, &c., to keep out moths.

## Agriculture, &c.

### AN INTERESTING VISIT TO A GUANO ISLAND.

Amongst all the new-fangled manures introduced by experimentalizing agriculturists, during the last twenty years, not one has been so rapidly and universally adopted as guano. Its astonishing fertilizing qualities, and easy mode of application have rendered it a general favorite with the farmers, though the immense distance of the places from which it is chiefly obtained, and its consequent high price, must limit its use, even if the supplies were inexhaustible.

The island of Ichaboe, on the west coast of Africa, from whence guano was first obtained in large quantities, is perhaps the most remarkable instance of a desolate rock becoming suddenly the port of destination for hundreds of large ships, and the source of immense wealth to numerous individuals. But Ichaboe was soon exhausted, and the dusty treasure that had for many centuries been accumulating on its rocky bosom, was literally swept away. The once busy island has now returned to its former loneliness, and the fleet of ships that gathered round it, seek on still more distant coasts, the fertilizing powder that shall fatten the impoverished fields of Old World countries.

More than half the guano imported during the last ten years, has been obtained from a small group of islands called the Chincas, that lie off the port of Pisco, on the Peruvian coast. Of these islands, the largest, Sangallan, has very little guano upon it, the principal deposits being found on three smaller ones, the most northern of the group. These are distinguished as the North, Middle, and South Islands. The North island has been constantly worked ever since the introduction of guano. The middle one has also been occasionally invaded; but the South island, on which we believe the accumulation to be greatest, remains untouched.

Every ship bound to the Chincas is compelled to anchor at Pisco, in order to pass the necessary custom-house formalities, before proceeding to her loading ground. A couple of hours are then sufficient to carry her across the few miles of water that intervene, and she soon drops her anchor amongst the numerous fleet that is ever laying off the island, waiting their turn to load. The odorous scent of the guano is distinctly perceptible at several miles distance, and is far from unpleasant, when thus mingled with the pure sea air.

The first duty of the crew after the ship's arrival is to discharge the extra ballast, and as the captains have no dread of port officers, or harbor masters, the sand or stone is quietly tossed over the side, until there is barely sufficient left in the hold to keep the vessel on an even keel. In the meantime the long boat is hoisted out of her berth amidships, and a part of her crew are busily employed in bringing off boat-loads of guano from the island, to replace the discharged ballast.—

The peculiar odour pervades the whole ship—the carefully tarred rigging becomes a dirty brown, while the snow white decks and closely furled sails, assume the same dark hue.

On the side next the mainland, the islands rise precipitately from the sea to a considerable height, presenting only a bare, dark wall of rock. From the upper edge of the precipice, the huge mound of guano slopes rapidly upwards for a short distance, and then spreads into a level surface that gradually descends on every other side to within a few yards of the water. Here and there, huge craggy points thrust their white heads through the brown crust of guano, which has completely filled up the deep hollows that have originally existed in the island, and would soon, had it not been disturbed, have covered even the crests of what were once tall pinnacles. The only safe landing place is on a narrow strip of beach, the remainder of the island being surrounded by low rock, and small detached reefs; but the irregular formation has greatly facilitated the loading of ships, enabling the crews to accomplish that in a few days, which, under other circumstances, must have cost them studious weeks of labor. Close to the face of the rock the water is deep enough to float the largest merchantman; and the steady constancy of the trade-wind, which rarely increases here beyond a pleasant breeze, enables the ship to lie in perfect safety in close contact with her two most dangerous enemies—a rocky island, and a dead lee shore.

Having taken aboard by her boats sufficient guano to ballast her, the ship is hauled in close to the steep reef, to which she is securely bound with warps and chains, two anchors being dropped to seaward, to enable her to haul off again when loaded.

Down to the very edge of the precipice, on its summit, comes the point of a triangular enclosure, open at its base, and made of strong stakes driven into the solid guano, and closely knit together with iron chains. At the point resting upon the edge of the cliff, there is a small opening, to which there is firmly attached a wide canvass pipe, which hangs down the face of the precipice, and passes into the hold of the vessel beneath. The enclosure, which will contain several hundred tons, is filled with guano by the Indian laborers, and a small line that encloses the mouth of the pipe being slackened, the whole mass is poured into the ship at a rate which very soon completes her cargo. From different parts of the pipe, bow-lines lead to the mast-heads of the vessel, and from thence on deck, where they are tended by the crew, who alternately haul upon and slack them, so as to keep the long pipe in motion, and prevent its choking. But however well they may succeed in that effort, the men have considerable difficulty in avoiding some such catastrophe in their own persons; for the guano, after falling from so great an elevation, rises through the hatchways in one immense cloud, that completely envelopes the ship, and renders the inhaling of anything else but dust almost a matter of impossibility. The men



wear patent respirators, in the shape of bunches of tarry oakum, tied across their mouths and nostrils; but the guano mocks at such weak defences, and a brisk continued fusillade of sneezes celebrates the opening of the pipe, and accompanies, in repeated volleys, and unwilling tears, the unremitting shower of pungent dust. In the meantime, a gang of Indians are at work in the hold, trimming and levelling the guano as it pours from above. How they contrive to exist at all in such an atmosphere is a matter of astonishment; but even they are unable to remain below longer than twenty minutes at any one time. They are then relieved by another party, and return on deck perfectly naked, streaming with perspiration, and with their brown skins thickly coated with guano. The two parties thus alternately relieving each other, a ship of seven or eight hundred tons is loaded in two or three days—the Indians working during the night, and filling up the enclosure, ready for shipment the following day. A smaller enclosure and pipe supply the boats of the vessel anchored off the island.

The guano is dug out with pick and shovel down to the level of the rock, and on the North island, the cutting thus formed, is in some places from 60 to 80 feet in depth—in others it is only a few inches; but these shallow spots are comparatively rare, and usually border on some deep valley, firmly packed with the prevailing substance. From the pressure of the superincumbent mass, the lower strata have become almost as hard and compact as the rock itself, and the color deepens from a light brown, or sometimes white, at the surface, to nearly black at the bottom of the cutting.

The guano of the Chinca Islands is said to surpass all other deposits in its strength and fertilizing qualities, and this is chiefly attributed to the fact that rain never falls on the islands.—Owing to this extreme aridity of the climate, the saline particles of the manure are never held in solution, and are therefore less liable to be lost by evaporation, than where the surface of the mass is frequently washed by heavy rains.—Large lumps of very strong and pure ammonia are, in fact, frequently turned up by the diggers. The thick fogs that at certain seasons are of nightly occurrence on the coast, convert the outer layer into a greasy paste, which is immediately baked by the sun into a hard crust, that prevents even the fogs from penetrating into the interior. This crust is completely undermined by the birds that still frequent the island in vast numbers, though they are said to bear no comparison to the myriads that formerly held sole and undisturbed possession of them. These are *misos*, *gamets*, *penguins*, *pelicans*, *divers*, *sheer-beaks*, and many other sorts of sea-fowl, but the most common is the *guano bird*, a very handsome creature, beautifully variegated, and decorated with two pendant ear-drops. Naturalists, delighting in hard words, call him, I believe, *sulicita variegata*. These web-footed colonists form regular towns beneath the crust of the guano, and various settlements, communicating with each other by galleries, running in all directions,

so that it is deemed almost impossible to set foot upon the untouched surface of the island, without sinking to the knee in some feathered lady's nursery, and either smashing her eggs, or mutilating her half-fledged progeny. The egg-shells, and the remains of fish brought to feed the young birds, or to be devoured at leisure by the old ones, must form a considerable item in the deposits.

Thickly tenanted as are the islands, and the air above, the waters beneath are no less full of life. Shoals of small fish are continually passing through the channels. Whales are frequently seen, rolling their huge bodies in the offing; and the numerous caves that perforate the islands on every side, are inhabited by colonies of seals and sea-lions, that wage an unceasing predatory war upon the sparkling shoals that pass, unconscious of all danger, off their gloomy surf-bound territories.

The islands themselves, are perfectly barren. Not a blade of grass, nor even a particle of moss, exists upon them. They present only one brown arid expanse, incapable of furnishing food for the tiniest nibbler that ever gnawed a grain of corn; and yet they possess sufficient fertilizing power to transform a barren desert into a fruitful garden; and they annually furnish food in other lands, for thousands of hungry mortals, who never even heard of their existence! They are also completely destitute of water—the Indians who live upon them, being supplied with this necessary of life by the shipping, in turns. Every article of food is brought from Pisco, to which port the guano diggers occasionally resort to spend in extravagance and dissipation their hard earned wages. The Commandant resides on the North island in a miserable cottage; four poles stuck in the guano, with grass mats or a few reeds stretched between them, and covered in with a flat roof, of the same material, form specimens of a high order of Chinca architecture. Furniture is of course unknown, and clothes are as nearly so as possible; but the high wages given to the laborers appear to balance the *desagremens* of their position; for several Englishmen are amongst their number. Some of these are employed in mooring the ships alongside of the rock.

Guano has been used for agricultural purposes in Peru, ever since the invasion of the Spaniards, and there are good grounds for believing that its use was known to the Indians long anterior to that period. It is now chiefly applied there in the cultivation of maize and potatoes, and large quantities of it are consumed in the haciendas that skirt the banks of the rivers which flow from the mountains through the desert, raising in their passage through the arid sand-ocean, long green islands, of extraordinary fertility. The mode of applying the manure differs considerably from that adopted with us. It is never used with the seed; but when the plants are a few inches above the surface, a long shallow trench is made close to the roots, and in this a small quantity of guano is placed, the white being always preferred.—The trench being laid completely under water by dams and sluices, erected for the purpose, or, where no such system of irrigation exists, other

means are adopted for thoroughly saturating the soil. The potatoes produced by this mode of culture, are perhaps the finest, both for size and quality, in the world, and the extraordinary rapidity of their growth, after the application of the manure, is most astonishing.

### FACTS ABOUT GUANO.

It is scarcely fifteen years since guano was first recommended to the notice of farmers in England and Scotland, as a substitute for farm-yard manure, or an auxiliary. Notwithstanding the incredulity and caution with which its claims were at first received, there is now an importation annually of about 150,000 tons into the different ports of Great Britain, which at an average of £10 per ton would amount to an expenditure of one million five hundred thousand pounds sterling, or about 7,500,000 dollars, on this one foreign manure alone. In one county of Scotland—that of East Lothian—it is estimated that from 12 to 18 shillings stg. are expended for guano and other portable manures, for every acre of the cultivated land. Indeed, sometimes as much as forty shillings' worth of guano, or nearly ten dollars' worth, is applied to one single acre. A case of this kind is mentioned in the last No. of the Journal of the Royal Agricultural Society. On a very inferior piece of land, for which only twenty shillings was paid as rent, as much as forty-six shillings' worth of guano was applied to every acre, the crop abundantly justifying this very liberal expenditure.

The beneficial results from the use of guano, if not always the greatest, are at last always the most observable, when applied to poor, or worn-out soils—such as cannot be made to produce a remunerating crop by ordinary means. On such soils it will often be found to pay to apply 200 or 300 lbs. of guano, at an expense of \$5 or \$6, when guano costs \$50 per ton. When applied to soils in good condition, the increase in the crop is not so observable; but the increase of crop is generally very striking indeed when the fertilizer is applied to lands greatly exhausted of their fertility.

As the fertilizing properties of guano are in too concentrated a condition to be applied in an undiluted state to seeds or plants, it must be diluted by being compounded with some innocuous or inert substance. Dry leached ashes, or sawdust, or pulverized peat from ditches, will answer the purpose. One part or bulk of guano may be mixed with five or six parts or bulks of either of these. Of this compound a tablespoonful is sufficient for a hill of corn or other vegetable.—*Country Gentleman.*

### CHEESE MAKING.

Good cheese, though differing in some respects with the tastes of the individual making or selecting it, has yet some general qualities, which are common everywhere. Its flavor ought to be mild and pleasant, but not lacking in strength; its texture should be light without being spongy,

and it ought to be tender, and not without a certain buttery quality which tests its richness. The outside should be firm and smooth. The size of the cheese should in all cases be rather medium, being more convenient to handle, more easy to sell, and as a general rule they are better cured than large cheeses, and not so liable to spoil.

No one need attempt to make good cheese, any more than they need attempt to make good butter, without having a due regard to cleanliness and the most scrupulous kind of it too: for the slightest neglect in the scalding of the utensils, or the least remains of old curd or sour milk, may and will spoil the good flavor of the most valuable cheese, though it may not be perceptible when the article first comes from the press.

Among the important processes in cheese-making, there is none which deserves more attention than the temperature of the milk when it is sought to separate the curd from the whey. Every one has become familiar with the fact, that the butter is not readily separated from the milk only at certain temperatures, and that if above or below them, the quality of the butter is deteriorated. It is the same with the making of cheese, in the separation of the curd; if the temperature is too high and the milk too warm, the curd will be tough, and the cheese tough and waxy in quality. If the milk be too cold when the rennet is added, it will be too long in separating, the curd will be tender, and it will be found difficult to get all the whey out of it. The right temperature for the complete separation of the curd, has been found by experiment to be about 84 to 86 degrees of Fahrenheit's thermometer. This is about 12 degrees lower than the milk is when it first comes from the cow. This is the temperature recommended by the best practical cheese-makers in both England and the United States. They nearly all recommend that the curd should be cut fine either by a machine or with the hand, so that the whey may be thoroughly separated from it. This practice is not followed by all who make cheese. There are some who recommend and follow the practice of putting their cheese to press without ever having broken the curd, trusting solely to the power of the press to squeeze out the whey thoroughly and efficiently, the cheese being pierced with skewers on different sides when first put under the press, which is very heavy. Very few, however, practice that method of preparing the curd for the press, nearly all the best manufacturers cutting it up with wooden knives, or some kind of machinery, where the business is carried on extensively.

Another very important part of cheese manufacture for market is that of curing the cheese after it is taken from the press. In the process of curing if there be any failure, the whole previous labor of the cheese-maker is lost, and some of the best and most experienced makers assert that more well made cheese is spoiled by neglect of frequent turning, and exposure to damp and bad air, than by any other process, though it would seem that after the cheese is taken from the press the danger is over.—*Michigan Farmer.*



## REV. DR. DUFF ON CANADA.

The visits of eminent persons to this country and their subsequent descriptions of it, are tending latterly to diffuse a much more accurate idea in the minds of the labouring and middle classes of Great Britain, of what are the real capabilities and resources of Canada, than they have hitherto possessed. The valuable papers written by Mr. Wm. Chambers of Edinburgh after his late visit, and now publishing in Chamber's *Journal*, must have a most beneficial effect in this respect. The late visit of the distinguished Missionary, the Rev. Dr. Duff, will be recollected by most of our readers. After his return to Scotland he delivered an eloquent speech at a public meeting in Edinburgh which would fill a page of an ordinary newspaper. We extract a portion of it relating to Canada:—

"I must now, however, pass into Canada; and, late as is the hour, must say a word or two upon it, however brief. I confess, before going there, I did not adequately understand the nature of the country, though I had heard a good deal about it. When passing from Detroit, for instance, eastward, to West Canada, and coming suddenly upon a city called London, I thought I had certainly awoke from a dream? What! is this Canada West? It was associated far more in my mind with untilled forests, and all kinds of wild beasts. Passing along there burst upon me one of those noble views which, in the course of the journey, are to be seen of this city. I said, What is this? London was the reply! It is certainly not so big as the old London; but really it is a striking and noble looking city, with 10,000 inhabitants. It is really most extraordinary to find such a city in the midst of what was the bush; and what is better still, I subsequently found its inhabitants a noble Christian people; but this is not all, for there are others which come upon you. For example, Hamilton, on Lake Ontario, with a population equal to that of Perth, though only about twenty years ago it had only a few huts. It is as fine a city as the Fair City itself, and is surrounded with noble hills and lakes. Then you come to Toronto, Cobourg, Kingston, Montreal, and other cities—in short, you are completely taken by surprise by the magnificent succession of growing cities, with their fine public edifices, and bustling commercial activities, that burst upon the view on all sides.

After paying a high compliment to a work published by Mr. Lillie, on the growth and prosperity of Canada, as throwing more light upon Canada than a thousand other volumes which had been written on the subject, and earnestly recommending that it should be republished here, for the instruction of our countrymen, the Rev. Doctor said, that there was not a nobler territory than this out of Great Britain and the United States, and that Canada West was one of the most promising parts of the British do-

minions in every respect, with reference to its capabilities and resources, as well as the social comforts, Christian character and rapidly expanding intelligence and energies of its inhabitants. It is colonized mainly by British people, with free institutions, of which they have proved themselves in every way worthy. Its growth in every aspect, has been proportionably as rapid as that of the United States, and that is unprecedented in the previous history of the world. Education, as well as agriculture, commerce, and everything else bearing on the improvement of man, are making vast progress.

## MR. SHERIFF TREADWELL'S PREMIUMS.

*Conditions on which the Premiums offered by Chas. L. Treadwell, Esq., President of the Agricultural Association of Upper Canada, are to be awarded to one Farm and one Garden in each of the Township Societies of the County of Prescott,—being £5 upon the Farm and £1 5s. upon the Garden:*

1st—The Farm to contain not less than one hundred acres, and to raise the greatest amount of Agricultural produce and Farm stock with the least paid labor.

[MR. TREADWELL would here remark that every Farmer should provide himself with the Farm Account Book recommended by the National Board of Education of Ireland, which can be obtained from Hew Ramsay, Esq., of Montreal, provided a sufficient inducement is held out to him to re-print it.

In reference to the Garden, the area to be about thirty-two square rods, and it is preferred that it should be in a rectangular form, but its being otherwise either in form or extent, does not exclude the parties from competition.

He would mention the rotation of Crops, which he hopes the *Experts* will find has been adopted.]

2nd—The ground should be well ploughed and prepared for the Root Crop, Indian Corn or Peas. For light soil the Belgian Carrot and Yellow Globe Turnip are preferable; for heavy soil the Mangel Wurtzel.

3rd—For the second crop sow Wheat or Barley.

4th—Third crop grass, either for meadow or pasture. Timothy and Clover, with Gypsum, are decidedly preferable for consumption on the farm. The former is best for hay for the market.

5th—Fourth year, continue the land in grass.

6th—Fifth, the same.

7th—Sixth, plough and sow Oats on light land, but in heavy soils it may be continued longer in hay.

8th—The implements of husbandry should form a prominent feature in the competition.—A Farm not possessing the Scotch Plough is excluded. Farms raising Stock of the most approved kinds of Horses, Cattle, Sheep, Swine and Poultry should be most favorably considered by the *Experts*.

9th—Surface draining should be next considered. This is, in fact, included under the preparation of the land, but it is necessary to draw the attention of the Farmer to it as a separate point, as it is one far too much neglected. Sub-

soil draining is beginning to agitate the public mind in the Western part of the Province, as well as the introduction of draining tiles, and he feels confident of their success. When they are fully tested he hopes they may be introduced by our Farmers.

10th—Fences. Wherever the land is stony, stone walls should be erected to clear it of them, as well as for their durability. On other lands the cedar rails, either round or split, laid upon blocks, and well capped and staked, should be duly considered by the *Experts*.

11th—The Farm Yard, Gut Buildings, and Farmer's House should be carefully examined. The Farm Yard should be well provided with water, as well as all the pastures.

12—Every Farm should have a certain number of fruit trees,—say, not less than fifty,—upon it. Their choiceness to be an object of consideration.

13th—The part of the Farm reserved for fuel should be particularly attended to. That selected should be least exposed to be blown down by violent winds. Where it is convenient, the wood on the Farms of several individuals should be left contiguous. It should be cleared of all lying wood, and seeded to grass as early as possible, and would furnish excellent food for horses and shade for cattle.

For the prizes on Gardens, he adopts the rules laid down by the Rev. Andrew Bell, in a letter published in the June number of the *Agriculturist*, viz: "The one which, 1st. contains such kind of Vegetables, in such *quantity*, in such *variety*, and of such *excellence*, as would minister most to the *support*, the comfort, the *enjoyment*, and the pleasure of a family all the year round. 2ndly. Contains the best crops of their kind. 3rdly. Shews the greatest freedom from weeds, and the greatest neatness and care. And 4thly. Displays the greatest amount of good taste in laying out and ornamenting with flowers.

The successful competitors shall be those who comply with the greatest number of important points in the foregoing statement and are members of either the County or Township Society.

L'Original, 14th June, 1854.

#### STATE AND PROVINCIAL FAIRS, 1854.

|                                  |                      |
|----------------------------------|----------------------|
| Michigan, at Detroit.....        | Sept. 26 to 29.      |
| Ohio, at Newark.....             | " 19, 20, 21, 22     |
| Vermont, at Brattleborough....   | " 12, 14, 15         |
| Illinois, at Springfield.....    | " 12, 13, 14, 15     |
| Pennsylvania.....                | " 27, 28, 29         |
| New York, at New York.....       | Oct. 3, 4, 5, 6      |
| Connecticut, at New Haven....    | " 10, 11, 12, 13     |
| Indiana, at Madison.....         | " 4, 5, 6, 7         |
| Iowa, at Fairfield.....          | " 25                 |
| Wisconsin, at Watertown.....     | " 4, 5, 6, 7         |
| New Hampshire.....               | " 3, 4, 5, 6         |
| Maryland, at Baltimore.....      | " 3, 4, 5, 6         |
| Georgia, at Augusta.....         | " 23, 24, 25, 26     |
|                                  | " 27, 28             |
| Springfield Cattle Show, Ohio... | " 25, 26, 27         |
| Missouri, at Boonville.....      | " 2 to 6.            |
| Lower Canada, at Quebec.....     | Sept. 12, 13, 14, 15 |
| Upper Canada, at London.....     | " 26, 27, 28, 29     |

#### REPORT OF THE COMPARATIVE ADVANTAGES OF SOILING AND PASTURING CATTLE.

BY WILLIAM ADAM, ESQ., OF RANNA, ABERDEEN.

The cattle experimented upon were twelve two-year old queys, crosses between the Aberdeen and Short-horned breeds. They were brought in about the middle of June, 1851, and having been kept on the same pasture till the 10th of July, were divided into three lots (four in each lot) of as nearly the same value as possible, by the reporter's farm-overseer and an experienced butcher, both considered good judges.

The first lot of four were pastured out of doors, in a field of excellent first year's grass, consisting of rye, grass, and clover, but principally of red clover. The part of the field railed off for this lot consisted of 3 acres, 2 roods, 5 poles. It was well sheltered on the north and north-east by a belt of thriving wood, and had in it an abundant supply of good spring water. It had been well laid down after turnips, and afforded a good supply of food for the lot put upon it up to the 12th of October, 1851, when they were removed, and very soon after sold, along with two other lots, to the same butcher.

The second lot of four were tied up in stalls, [two-and-two in a stall,] and received daily as much of the same description of green cut rye-grass and clover as they could eat during the same period, [from the 10th day of July to the 12th of October, 1851.] They were regularly fed at stated intervals during the day, and had abundant supply of litter. They were also curried once a day. The extent of the ground required to supply this lot with grass, part of which was cut twice and part three times, was 1 acre, 2 roods, 35 1-2 poles.

The third lot of four were also tied up [two-and-two] in stalls, and received as much of the same description of rye and clover grass cut green as they could eat, with a like supply of water and litter. They were also curried once a day, and, in addition to the cut grass, each of the cattle composing this lot received daily a small allowance, by measure, of bruised oil-cake, and of bruised linseed and light oats. The extent of ground required to supply this lot with provender during the period of the experiment, was 1 acre, 2 roods, 35 1-2 poles.

All the three lots thrived exceedingly well, but it soon became apparent that the lot receiving the oil cake and bruised linseed and oats, was advancing before the other two lots, although it was doubtful so much as to justify the expense of this food. The progress of the first and second lots seemed so equal during the period of the experiment, that no two judges who saw them could agree as to which lot had the advantage of the other; but the third lot continued to maintain its superiority during the whole period of the experiment.

The four animals composing the first lot, which were pastured out of doors, were estimated at the commencement of the experiment, at £47.

Those composing the second lot, fed in stalls in the house on green cut rye grass and clover, were also estimated at £47.



And the value of the four animals composing the third lot, fed in the house in stalls on green rye grass and clover, with oil-cake and crushed linseed and light oats, were estimated at £52.

At the termination of the experiment, lot first was computed by competent judges to be worth £55 15s.; thus giving an increase of value on the lot of - - - £ 8 15 3

From this deduct the value of the grass, 3 acres, 2 roods, 6 poles, consumed by them, estimated at £3 per acre for the season 10 12 3

And the balance exhibits a loss of £1 17 3

As the ground, however, was pastured by cattle for some weeks before being railed off for this experiment, it seems fair, on comparing it with the ground from which the grass was cut, to allow a corresponding deduction from the rent, which may be about equal to this apparent loss 1 17 3

Lot second, at the close of the experiment, was by the same judges estimated at £55 15s.; but the butcher who bought the whole cattle found that this lot turned out to be worth £1 more than lot first, or £56 15s., thus giving an increase of value of - - - £9 15 0

Deduct the value of the grass consum'd, 1 acre 2 roods, 35 1-2 poles, at £3 per acre - - £5 3 4

Price of 1 1-2 cwt. of guano put upon the ground after the first cutting of grass - - 0 15 0

Price of 1 1-2 cwt. to be put upon the ground in spring 1852, to compensate for its deterioration in consequence of the grass having been cut in place of pastured - - - 0 15 0

Proportion of expense of attendance on the cattle, say - - - 1 5 0

7 18 4

Showing a profit of - - - £1 16 8

To which add the value of the manure produced by this lot, estimated at - - - 2 0 0

£3 16 8

Lot third, which got the oil-cake and bruised linseed and light oats, in addition to green provender, was valued at the close of the experiment, by the same judges, at £77, and the butcher who bought them at that sum sent them to London, and it is understood he was safe with them, but he said he realized no profit. The increase of value on this lot was accordingly - - - £25 0 0

From which deduct the value of the grass consumed, 1 acre, 2 roods 35 1-2 poles, at £3 per acre - - - £ 5 3 4

The value of linseed and oil-cake, £7 19s. 6d. and crushed light oats £3 4s. consumed - 11 3 6

Proportion of expense of attendance - - - 1 5 0

Price of 1 1-2 cwt. of guano put on the ground after the first cutting - - - 0 15 0

Price of 1 1-2 cwt. ditto, to the ground in spring 1852, to compensate for its deterioration in consequence of the grass having been cut in place of pastured - 0 15 0

19 1 10

Leaving for outlay and profit on the lot - - - £ 5 18 2

To which add the value of the manure increased at least to the extent of 10s. over that of lot second, by the use of oil-cake and bruised oats 2 10 0

£8 8 2

It thus appears that there was a gain on the lot fed in the house on cut grass alone, over the lot hasted in the fields of £3 16s. 8d., and that on the lot which received the addition of oil-cake and crushed linseed and light oats, there was a gain over those pastured in the field of no less a sum than £8 8s. 2d., and over the lot fed in the house, on cut grass alone, of £4 11s. 6d., proving beyond a doubt that high house-feeding is the most remunerative to the farmer.

It may be proper to add, that as the whole grass on the farm had been pastured by sheep during the winter, and till far into spring, and very closely eaten, it was later in the season before it could be either pastured by cattle or cut for soiling than otherwise it would have been.—*Scottish Journal of Agriculture.*

VALUABLE DISCOVERY.—A very superior article of Spanish Brown has been lately found near Elyton, Ala., which has been tested by competent persons, and pronounced to be better than the imported article. The quantity is said to be inexhaustible, as "there is a whole mountain of it."

RICE.—There is no more healthy food, particularly at a season when bowel complaints are prevalent, than rice; that is, if properly cooked. We regret to say not one cook in ten can perform the simple operation of boiling rice. Take two measures of water to one of rice; soak the rice an hour or two previously and then boil until it absorbs all the water, which will be about eight or ten minutes, and it is done. If the boiling is continued longer, it will become like paste—clammy and indigestible.

## Natural History.

### THE OX.—HISTORY, MANAGEMENT, &c.

#### THE IRISH CATTLE.

Before we enter on the consideration of the two remaining breeds of English cattle, the long and the short-horns, we will take a very rapid glance at the Irish cattle.

They are evidently composed of two distinct breeds; the middle and the long-horns.

The middle-horns are plainly an aboriginal breed. They are found on the mountains and rude parts of the country, in almost every district. They are small, light, active, and wild. The head is small, although there are exceptions to this in various parts; and so numerous, indeed, are those exceptions, that some describe the native Irish cattle as having thick heads and necks; the horns are short compared with the other breed, all of them fine, some of them rather upright, and frequently, after projecting forward, then turning backward. Although somewhat deficient in the hind-quarters, they are high-boned, and wide over the hips, yet the bone generally is not heavy. The hair is coarse and long; they are black, brindled, and black or

brindled, with white faces. Some are finer in the bone, and finer in the neck, with a good eye, and sharp muzzle, and great activity.

They are exceedingly hardy; they live through the winter, and sometimes fatten on their native mountains and moors; and when removed to a better climate and soil, they fatten with all the rapidity of the aboriginal cattle of the Highlands and Wales. They are generally very good milkers, and many of them excellent. The cow of Kerry, a portrait of which is here presented, is a favorable specimen of them.

The cow of Kerry is truly a poor man's cow, living everywhere hardy, yielding, for her size, abundance of milk of a good quality, and fattening rapidly when required. The slightest inspection of the cut will convince the reader of the difference between this breed and both the larger and the smaller long-horned Irish one.

These cattle usually are small, and are confined to the hilly and moor grounds. Some are of considerable size, elsewhere, and are improved in form as well as in weight. The horns, usually of middle length, turn up; as do the horns of those on the mountains; they are shorter in the leg, shorter in the body; their loins and haunches are heavy and wide; although the hair is thick, the hide is mellow, and they thrive with rapidity.



KERRY COW.

This breed is now not to be met with pure, except inland on the mountains; being nearly worn out elsewhere by the repeated crosses with the Leicester, Hereford, and Devon; but for the dairy, all the farmers still prefer those cows with most of the native Irish blood.

The other breed is of a larger size. It is the old or the partially improved Craven or Lancashire beast. It is the true long-horn; the horns first taking a direction outward, then forming a curve, and returning toward the face, sometimes threatening to pierce the bones of the nose, at

other times so to cross before the muzzle that the animal is unable to graze.

There are at the present two kinds of these cattle in Ireland, in character essentially different; the larger, which we have described, and a smaller, prevailing principally in the north of the island. At first view, perhaps, these would appear to be the same cattle, only smaller from poor keep and bad management; but their horns, long out of all proportion, clumsy heads, large bones and thick hides, bulkiness of dewlap contrasted with their lightness of carcass, in fine, an



accumulation of defects about them, clearly mark them as being of far inferior value.

In process of time, the English long-horns, although of the improved Bakewell breed, began to lose ground even in their native country; or rather a rival with higher merits appeared in the field. The short-horns began to attract the attention of the breeder; and their propensity to fatten, and earlier maturity, soon became evident. There were not wanting spirited agriculturists in Ireland, who quickly availed themselves of this new mode of improving the Hibernian cattle. Sir Henry Vane Tempest was one of the first who introduced the short-horn bull. The improvement effected by the first cross was immediately evident in the early maturity of the progeny. The pure short-horn, or this cross with the long-horn, weighed as much at three years old as the pure long-horn used to do at five. But the first experiment in a great degree failed.

The reputation of the short-horn, however, becoming more spread in England, other attempts were made to introduce him into Ireland, and the experiments were more systematically conducted. And great improvement has been effected in the Irish cattle of late years, by the importation of the Durham breed. They have displaced a cross of the long-horn Leicester on the Irish cow, and the farmers of the country now prefer a cross of the Durham bull on the Irish cow, to the pure breed, as being less delicate, and giving a richer and greater quantity of milk.

### THE LONG-HORNS.

In the district of Craven, a fertile corner of the West Riding of Yorkshire, there has been, from the earliest records of the British agriculture, a peculiar and valuable breed of cattle. They were distinguished from the home-breeds of other counties by a disproportionate and frequently unbecoming length of horn. In the old breed this horn frequently projected nearly horizontally on either side, but as the cattle were improved the horn assumed other directions; it hung down so that the animal could scarcely graze, or it curved so as to threaten to meet before the muzzle, and so long as to prevent the beast from grazing; or immediately under the jaw, and so to lock the lower jaw; or the points presented themselves against the bones of the nose and face, threatening to perforate them. In proportion as the breed became improved, the horns lengthened, and they are characteristically distinguished by the name of "the Long-Horns." Cattle of a similar description were found in the district of Lancashire bordering on Craven, and also in the south-eastern parts of Westmoreland; but tradition in both of these districts pointed to Craven as the original habitation of the long-horn breed. If there gradually arose any difference between them, it was that the Craven beasts were the broadest in the chime, the shortest, the handsomest, and the quickest feeders; the Lancashire ones were larger, longer in the quarters, but with a fall behind the shoulders, and not so level on the chine.

Whence these cattle were derived was and still is a disputed point.

The long horns seem to have first appeared in Craven, and gradually to have spread along the western coast, and to have occupied almost exclusively the midland counties.

There are two distinct breeds; the smaller Cravens inhabiting the mountains and moorlands, hardy, useful, valued by the cottager and little farmer on account of the cheapness with which they are kept, the superior quantity and excellent quality of the milk which they yield, and the aptitude with which they fatten when removed to better pasture. The larger Cravens, occupying a more level and richer pasture, are fair milkers, although in proportion to their size not equal to the others; but possess a tendency to fatten and acquire extraordinary bulk, scarcely inferior to that of short-horns.

As either of these found their way to other districts, they mingled to a greater or less degree with the native cattle, or they felt the influence of change of climate and soil, and gradually adapted themselves to their new situation; and each assumed a peculiarity of form which characterized it as belonging to a certain district, and rendered it valuable and almost perfect there.

It was not until about the year 1720 that any agriculturist possessed sufficient science and spirit to attempt improvement in good earnest. A blacksmith and farrier, of Lieton, in Derbyshire, on the very borders of Leicestershire, who rented a little farm, has the honor of standing first on the list. His name was Welby. He had a valuable breed of cows, which came from Drakelow house, a seat of Sir Thomas Gresley, on the banks of the Trent, about a mile from Burton. He prided himself much in them, and they deserved the care which he took in improving them and keeping the breed pure; but a disease, which defied all remedial measures, carried off the greater part of them, thus half ruining Welby, and putting a stop to his speculations.

Soon after this Mr. Webster, of Canley, near Coventry, distinguished himself as a breeder. He too worked upon Sir Thomas Gresley's stock, some of whose cows he brought with him when he first settled at Canley. He procured bulls from Lancashire and Westmoreland, and is said to have had the best stock of cattle then known.

The bull, Bloxedge, (the Hubback of the long-horns,) indebted to accident for the discovery of his value, was out of a three-year old heifer of Mr. Webster's, by a Lancashire bull, belonging to a neighbor. When a yearling, he was so unpromising that he was discarded and sold to a person of the name of Bloxedge, (hence the name of the beast,) but turning out a remarkably good stock-getter, Mr. Webster re-purchased him, and used him for several seasons.

Now appeared the chief improver of the long-horns, to whom his cotemporaries and posterity have adjudged the merit of creating as it were a new breed of cattle. It is a disgrace to the agriculture of the times that Bakewell should have

been suffered to pass away without some authentic record of the principles that guided him, and the means by which his objects were accomplished.

The only memoir we have of Robert Bakewell is a fugitive paper in the *Gentleman's Magazine*, from which every writer has borrowed. Robert Bakewell was born at Dishley, in Leicestershire, about 1725. Having remarked that domestic animals in general produced others possessing qualities nearly similar to their own, he conceived that he had only to select from the most valuable breeds such as promised to return the greatest possible emolument, and that he should then be able, by careful attention to progressive improvement, to produce a breed whence he could derive a maximum of advantage. He made excursions into different parts of England, in order to inspect the different breeds, and to select those that were best adapted to his purpose, and the most valuable of their kind; and his residence and his early habits disposed him to give the preference to the long-horn cattle.

We have no account of the precise principles which guided him in the various selections which he made; but Mr. Marshall, who says that he "was repeatedly favored with opportunities of making ample observations on Mr. Bakewell's practice, and with liberal communications from him on all rural subjects," gives us some clue. He speaks of the general principles of breeding, and when he does this in connection with the name of Bakewell, we shall not be very wrong in concluding that these were the principles by which that great agriculturist was influenced.

"The most general principle is beauty of form. It is observable, however, that this principle was more closely attended to at the outset of improvement (under an idea, in some degree falsely grounded, that the beauty of form and utility are inseparable) than at present, when men, who have long been conversant in practice, make a distinction between a "useful sort" and a sort which is merely "handsome."

"The next principle attended to is a proportion of parts, or what may be called *utility* of form, in distinction from *beauty* of form; thus the parts which are deemed *offal*, or which bear an inferior price at market, should be small in proportion to the better parts.

"A third principle of improvement is the texture of the muscular parts, or what is termed *flesh*, a quality of live stock which, familiar as it may long have been to the butcher and the consumer, had not been sufficiently attended to by breeders, whatever it might have been by graziers. This principle involved the fact that the grain of the meat depended wholly on the *breed*, and not, as had been before considered, on the size of the animal. But the principle which engrossed the greatest share of attention, and which, above all others, is entitled to the *grazier's* attention, is *fattening quality*, or a natural propensity to acquire a state of fatness at an early age, when in full keep, and in a short

space of time; a quality which is clearly found to be hereditary."

Therefore, in Bakewell's opinion, everything depended on breed; and the beauty and utility of form, the quality of the flesh, and the propensity to fatness, were, in the offspring, the natural consequence of similar qualities in the parents. His whole attention was centered in these four points; and he never forgot that they were compatible with each other, and might be occasionally found united in the same individual.

Improvement had hitherto been attempted by selecting females from the native stock of the country, and crossing them with males of an alien breed. Mr. Bakewell's good sense led him to imagine that the object might better be accomplished by uniting the superior branches of the same breed, than by any mixture of foreign ones.

On this new and judicious principle he started. He purchased two long-horn heifers from Mr. Webster, and he procured a promising long-horn bull from Westmoreland. To these and their progeny, he confined himself; coupling them as he thought he could best increase or establish some excellent point, or speedily remove a faulty one:

As his stock increased, he was enabled to avoid the injurious and enervating consequence of breeding *too closely* "in and in." The breed was the same, but he could interpose a remove or two between the members of the same family. He could preserve all the excellences of the breed, without the danger of deterioration; and the rapidity of the improvement which he effected was only equaled by its extent.

Many years did not pass before his stock was unrivaled for the roundness of its form, and the smallness of its bone, and its aptitude to acquire external fat; while they were small consumers of food in proportion to their size; but, at the same time, their qualities as milkers were very considerably lessened. The *grazier* could not too highly value the Dishley, or new Leicester long-horn, but the *dairyman*, and the *little farmer*, clung to the old breed, as most useful for their purpose.

It was his grand maxim, that the bones of an animal intended for food could not be too small, and that the fat, being the most valuable part of the carcass, could, consequently, not be too abundant. In pursuance of this leading theory, by inducing a preternatural smallness of bone, and rotundity of carcass, he sought to cover the bones of all his animals, externally, with masses of fat. Thus, the entirely new Leicester breed, from their excessive tendency to fatten, produce too small a quantity of eatable meat, and that, too, necessarily of inferior flavor and quality. They are in general found defective in weight, proportionably to their bulk, and, if not thoroughly fattened, their flesh is crude and without flavor; while, if they be so, their carcasses produce little else but fat, a very considerable part of which must be sold at an inferior price, to make candles instead of food, not to forget the very great waste that must ever attend the consumption of over-fattened meat.



This great and sagacious improver, very justly disgusted at the sight of those huge, gaunt, leggy, and misshapen animals with which his vicinity abounded, and which scarcely any length of time or quantity of food would thoroughly fatten, determined upon raising a more sightly and a more profitable breed; yet, rather unfortunately, his zeal impelled him to the opposite extreme. Having carefully, and at much cost, raised a variety of cattle, the chief merit of which is to make fat, he has apparently laid his disciples and successors under the necessity of substituting another that will make lean.

Mr. Bakewell had many prejudices opposed to him, and many difficulties to surmount, and it is not therefore to be wondered at if he was more than once involved in considerable embarrassment; but he lived to see the perfect success of his undertaking.

He died when verging on his seventieth year. His countenance bespoke activity and a high degree of benevolence. His manners were frank and pleasing, and well calculated to maintain the extensive popularity he had acquired. His hospitality to strangers was bounded only by his means.

Many anecdotes are related of his humanity towards the various tribes of animals under his management. He would not suffer the slightest act of cruelty to be perpetrated by any of his servants, and he sternly deprecated the barbarities practised by butchers and drovers; showing, by examples on his own farm, the most pleasing instances of docility in every animal.

Mr. Bakewell's celebrated bull Twopenny was the producer of the Westmoreland bull, out of old Comely, one of the two heifers purchased from Mr. Webster; therefore he was, by the side of his dam, a direct descendent of the Canley blood.

Mr. Bakewell had afterwards a more valuable bull than this, named D. He retained him principally for his own use, except that he was let

for part of a season to Mr. Fowler, and that a few cows were brought to him at five guineas a cow. He was got by a son of Twopenny, out of a daughter and sister of the same bull, she being the produce of his own dam.

Starting a few years afterwards, and rivaling Mr. Bakewell in the value of his cattle, was Mr. Fowler of Rollwright, in Oxfordshire. His cows were of the Canley breed; most of them having been purchased from Mr. Bakewell; and his bull Shakspeare, the best stock-getter that the long-horn breed possessed, was got by D., out of a daughter of Twopenny, and therefore of pure Canley blood.

#### THE LEICESTER LONG-HORN BULL.

What is now become of this improved long-horn breed? Where is it to be found? It was a bold and a successful experiment. It seemed for a while to answer the most sanguine expectation of these scientific and spirited breeders. In the districts in which the experiments were carried on, it established a breed of cattle equalled by few, and excelled by none but the Herefords. It enabled the long-horns to contend, and often successfully, with the heaviest and best of the middle-horns. It did more; it improved, and that to a material degree, the whole breed of long-horns. The Lancashire, the Derbyshire, the Staffordshire cattle became, and still are, an improved race; they got rid of a portion of their coarse bone. They began to gain their flesh and fat on the more profitable points, they acquired a somewhat earlier maturity, and, the process of improvement not being carried too far, the very dairy-cattle obtained a disposition to convert their aliment into milk while milk was wanted, and, after that, to use the same nutriment for the accumulation of flesh and fat. The midland counties will always have occasion to associate a feeling of respect and gratitude with the name of Bakewell.



NEW LEICESTER LONG-HORN COW.

Mr. Marshall thus describes the improved Leicesters in his own time, which was that of Bakewell, Princep, and Fowler.

"The *forend* long; but light to a degree of elegance. The neck thin, the chap clean, the head fine, but long and tapering.

"The *eye* large, bright and prominent.

"The *horns* vary with the sex, &c. Those of bulls are comparatively short, from fifteen inches to two feet; those of the few oxen that have been reared of this breed are extremely large, being from two and a half to three and a half feet long; those of the cows nearly as long, but much finer, tapering to delicately fine points. Most of them hang downward by the side of the cheeks, and then, if well turned, as many of the cows are, shoot forward at the points.

"The *shoulders* remarkably fine and thin, in bone; but thickly covered with flesh—not the smallest protuberance of bone.

"The *girth* small, compared with the short-horn and middle-horn breeds.

The *chine* remarkably full when fat, but hollow when low in condition."

This is considered by accurate judges to be a criterion of good mellow flesh. The large hard ligament, (the continuation of the ligaments of the neck, united with those of the vertebræ of the spine itself,) which in some individuals, when in low condition, stretch tightly along the chine, from the setting on of the neck to the fore part of the loins, is said to be a mark of the flesh being of a bad quality. They are only proofs of great strength in the spine, and probably, in the animal generally; and indicating that the meat will be sinewy and tough.

"The *loin* broad, and the *hip* remarkably wide and protuberant."

A wide loin, with projections of fat on the hips, may be desirable; but there can be neither beauty or use in the protuberance of the tuberosities of the bone. A full hip may be of advantage, but scarcely a protuberant one.

"The *quarters* long and level; the *nache* of a middle width, and the *tail* set on variously, even in individuals of the highest repute.

"The *round-bones* small, but the *thighs* in general fleshy; tapering, however, when in the best form toward the gambrels.

"The *legs* small and clean, but comparatively long. The *feet* in general neat, and of the middle size.

"The *carcass* as nearly a cylinder as the natural form will allow. The *ribs* standing out full from the spine. The *belly* small.

"The *flesh* seldom falls of being of the first quality.

"The *hide* of a middle thickness.

"The *color* various; the brindle, the finch-back, and the pye, are common. The *lighter*, the better they are esteemed.

"The *fattening* quality of this improved breed, in a state of maturity, is indisputably good.

"As *grazier's stock*, they undoubtedly rank high. The principle of the *utility of form* has been strictly attended to. The bone and offal are small, and the forend light; while the chine,

the loin, the rump and the ribs are heavily loaded, and with flesh of the finest quality. In point of early maturity, they have also materially gained. In general, they have gained a year in preparation for the butcher; and although perhaps not weighing so heavy as they did before, the little diminution of weight is abundantly compensated, by the superior excellence of the meat, its earlier readiness and the smaller quantity of food consumed.

"As *dairy-stock*, it does not admit of doubt that their milking qualities have been very much impaired.

"As *beasts of draught*, their general form renders them unfit; yet many of them are sufficiently powerful, and they are more active than some other breeds used for the plough, or on the road; but the horns generally form an insuperable objection to this use of them."

#### THE LONG-HORN FEEDING OX.

But what is become of Bakewell's improved long-horn breed? A veil of mystery was thrown over most of his proceedings, which not even his friend Mr. Marshall was disposed to raise. The principle on which he seemed to act, breeding so completely "in and in" was a novel, a bold, and a successful one. Some of the cattle to which we have referred were very extraordinary illustrations, not only of the harmlessness, but the manifest advantage of such a system; but he had a large stock on which to work; and no one knew his occasional deviations from this rule, nor his skilful interposition of remoter affinities, when he saw or apprehended danger.

The truth of the matter is, that the master spirits of that day had no sooner disappeared, than the character of this breed began imperceptibly to change. It had acquired a delicacy of constitution, inconsistent with common management and keep; and it began slowly, but undeniably, to deteriorate. Many of them had been bred to that degree of refinement, that the propagation of the species was not always certain.

In addition to this, a powerful rival appeared in the field, the short-horns of the Tees. They presented equal aptitude to fatten, and greater bulk and earlier maturity.

Westmoreland was the native land of the long-horns. Webster brought thence the father of the Canley stock; and Bakewell sought the father of his breed there: but even in Westmoreland the short-horns appeared; they spread; they established themselves; in a manner superseded the long-horns. They found their way to southern districts; they mingled with the native breeds; a cross from them generally bestowed increase of milk, aptitude to fatten, and early maturity. It is true, that a frequent recourse to the short-horn was generally necessary in order to retain these advantages, but these advantages were bestowed, and might be retained, except in a few districts, and for some particular purposes. Thus they gradually established themselves everywhere; they were the grazing cattle of the large farmer and the gentleman, and another variety of them occupied the dairy. The



benefits conferred by the improved long-horns remained, but the breed itself gradually diminished; in some places it almost disappeared; and

at the present moment, and even in Leicestershire, the short-horns are fast driving the long-horns from the field.



DERBY COW.

The preceding cut is a faithful portrait of one of the best of them. The horns are altogether characteristic.

The Derbyshire cows were originally long-horns; and although of a somewhat inferior breed, they were very useful animals, and especially in the dairies of this country, the cheese of which has long been admired. What cross gave them their peculiar character, and especial-

ly their singular horns, it is now impossible to determine. The head was frequently thick and heavy, the chops and neck foul, the bone too large, the hide heavy, and the hair long; even the bag was overgrown and covered with hair—a circumstance very objectionable to the dairyman; they were little disposed to take on flesh and fat, yet they were excellent dairy cows.

#### ARE SMALL OR LARGE SHEEP THE MOST PROFITABLE?

Ever since the days of the far-famed Mr. Bakewell, of Dishley, Leicestershire, there have been two opinions, whether large or small sheep are the most profitable. The breeders of small sheep, say that an animal may be good and not great, and great and not good, and that size has nothing to do with profit. It is not what an animal makes, so much as what it costs making; and that a larger number of small sheep can be kept upon a given number of acres than larger sheep, the lesser sheep not consuming so much food per head as the larger.

The breeders of large sheep say that they can produce more wool and mutton per acre by breeding large sheep than small; and that Mr. Bakewell lived when fat flesh or tallow made as much per lb. as lean flesh. Since that time, through the gas, one pound of lean flesh has made as much as two pounds of fat when pared off as tallow, and that there is more lean flesh in proportion upon large sheep, such as Lincolns and Cotswolds, than upon the true bred Leicesters, that are now, and have been famous for fat flesh, small bone, and a great propensity to

fatten at early maturity. Many people have an idea that the sheep are all small that are bred in Leicester, which is erroneous. Last year I travelled through several counties, to find wool, mutton, and size combined. I found at Drayton on the Welland, in Leicestershire, four miles from Rockingham Castle, 140 rams belonging to Mr. Byran Ward, an eminent grazer, who feeds yearly upon grass from 500 to 600 oxen, and shears two thousand sheep. Mr. Ward's rams have plenty of wool, size and lean flesh, clifted all through their backs, with small, fine thin, heads, which denote a well bred animal, and a propensity to fatten at an early age. Mr. Ward's sheep are styled, by many, Old Leicesters, because they have more wool and size than the pure bred New Leicesters, and have a great semblance to the best long woolled Lincolns. There are now many flocks in the county of Leicester that have been crossed with Lincolns and Cotswolds, to increase size and wool; and there are many flocks left of what they style pure bred New Leicesters. By the ram sales at Peterborough fair, last year, the Linconshire sheep seem to be gaining ground, as they made more money than any other kind of long-wooled white-faced sheep.—*M. L. Express.*

## Editorial, &c.

G. BUCKLAND, ESQ., EDITOR.

F. THOMSON, ESQ., ASSISTANT EDITOR.

### HINTS FOR THE MONTH.

The principal business of August consists rather in gathering in the fruits of the earth than in preparing the soil for new crops, though a few varieties of plants, such as late turnips, and some garden vegetables may still be sown with advantage.

Wheat harvest in Upper Canada, appears now to generally take place somewhat earlier than in former years, and before these remarks reach our readers, the greater portion of that crop throughout this Province will probably be secured. The reports of the general yield of the crop throughout the Country are somewhat contradictory, being described as abundant in some portions, and inferior in others. We are led to infer that the general return will be at least an average one. In the beginning of August the farmer will have abundant employment, under the present scarcity and high rates of hired labor to get his remaining field crops, such as oats, peas &c, secured before it becomes necessary for him to devote his chief attention to the sowing of his fall wheat. The mode of harvesting grain scarcely requires any further remarks than those already gives in previous numbers of this Journal. Harvest as soon as the crop is sufficiently ripened, and before it is over-ripe, cut and rake cleanly, tie in moderately sized sheaves, took up neatly—it is advisable to place cap sheaves over oats, especially if the straw be rather green—and as soon as the straw and grain are sufficiently dry, but not before that, draw in the crop with all expedition, and avoid the risk of further exposure to bad weather. By the energetic practice of such simple rules little danger is generally to be apprehended of loss from bad harvest weather in this country. In case of storms, it is of course necessary to go through the fields at once and set up any sheaves that may be blown down, and if the rain has been heavy and long continued, it may be neces-

sary to open out the sheaves to prevent growing.

During these operations something will also be occasionally done in the preparation of the wheat fallows; either drawing out the manure, ploughing, or harrowing. In order to ensure getting fall wheat sown in sufficiently early time, the fallows ought to be ready to receive the final or seed furrow, at latest, as early as about the 20th of August. Much discussion has taken place, among theoretical farmers, on the question of the real necessity for making a naked summer fallow as a preparation for fall wheat, many contending that to sow after peas, barley or clover lea would answer equally well. But general observation and experience have taught farmers in this country, especially those who farm heavy clay soils, that there is no course of treatment so much to be depended upon for obtaining a good crop of fall wheat as that of a well worked summer fallow. Its uses are four fold: it affords the best opportunity of thoroughly destroying noxious weeds; of breaking up the soil to a sufficient depth, and bringing up a portion of the subsoil to the surface so that the whole becomes well incorporated; of getting the surface of the field into that mechanical condition which is most suitable for the reception of the seed; and lastly, by the thorough exposure to the sun and weather, the salts or inorganic substances in the soil, are disintegrated and rendered available for use by the plant. The fallow also offers a convenient opportunity of applying the farm yard manure to the field. In the present condition of farming in this country the naked summer fallow is generally found on clay soils to be the best preparation for wheat. When a judicious system of rotation of crops becomes more common naked fallows will not be so often required. It is very true that good crops are sometimes even now obtained after peas, barley or clover, but in these cases regard must be had to the condition of the land before those crops were sown. If foul, or in a poor condition, to attempt sowing wheat after them will generally, as a natural consequence, be attended by failure.

But although the naked summer fallow may



be the best preparation for wheat, on clays or strong loams, it does not follow that it is the best course to adopt on light loams and sandy soils. In such soils, as they admit the air readily, there is not usually a great amount of inert inorganic matter, capable of ready decomposition by exposure to sun and weather; and consequently, in the absence of the main causes which render fallows so efficacious on strong clays, they are not, on sandy soils, usually followed by the abundant crops obtained on strong clay loams, which require frequent working to admit the action of the atmosphere. On light loams, when first cleared and brought into cultivation, fallows have a good effect, because then there is a quantity of crude vegetable matter, which requires to be subjected to decomposition, but after one or two crops they are found not to have the same effect as on strong clays, on which the result continues to be as favorable as ever. Sandy soils are usually poor in organic matter, and other elements of crops, while clay soils have a large supply. Summer fallowing accelerates the decomposition of these elements without increasing the supply, consequently sandy soils, from their permeability and poverty, must soon be exhausted by frequent summer fallowing. The wiser course is therefore to husband these aids to production by avoiding naked fallows, and substitute clover, peas, vetches, or other green crop, which may either be eaten off the ground by sheep or cattle, ploughed in, or fed to cattle in the stables and the manure returned to the field.

Wheat may be sown successfully on sandy soils after such crops, provided the land be clean, and in good heart and tilth. On medium clay loams also, a kind of land very common in Upper Canada, experience has proved that in this climate, where the frosts of winter and heat and rains of summer, have so favorable an influence in pulverizing the soil, long fallows are not so necessary as on stiff clays, and where these influences do not prevail. By the growth of clover, to be eaten off or mown in the first months of summer, and ploughed up the last of June or in July, and then cultivated sufficiently till sowing time to keep down the weeds and

grass, very good crops of wheat are obtained, while there is an economy of time and labor, and a greater gross amount of produce. This practice is becoming more common every year. Clover lea is sometimes even ploughed a very short time before sowing wheat, and good crops obtained, but this method is often found difficult of execution, and cannot always be depended upon for a satisfactory result.

The obtaining of pure clean seed, and of the best variety, in view of the approaching seed time, is, of course, one of the most important matters demanding the farmer's attention.

August is one of the busiest, and most important months, and the farmer has frequently as much as he can do to get the bulk of his field crops out of the way before wheat sowing begins—root crops, corn, &c.; must receive attention at a later date.

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#### HORTICULTURAL SOCIETIES OF UPPER CANADA.

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It is pleasing to observe the spread of organizations of this sort for promoting the various branches of that highly important and civilising pursuit,—horticulture. Several societies of this kind now exist in both sections of Canada, and as a consequence a taste for gardening, and for embellishing country as well as suburban residences, is being diffused among us. We are glad to observe that a promising Horticultural Society has recently been established at Brockville; the first exhibition of which took place the other week, and was highly creditable to the town and neighborhood. A beginning so successful cannot fail to stimulate the friends of the society to still greater exertions. We take this opportunity of thanking the worthy Secretary for his polite invitation, which we regret we could not accept, and wish the society a long and uninterrupted career of prosperity. We regret having mislaid the paper containing the particulars of the Show, or we should have in this notice gone a little more into detail.

The second exhibition of the *Toronto Horticultural Society* was well attended, and con-

tained several specimens of flowers, fruits and vegetables of superior merit. Professor Croft exhibited some very fine strawberries of excellent flavor, and the display of roses belonging to the Hon. Judge Harrison was much admired. Other amateurs exhibited productions of very decided excellence, and our nurserymen, Messrs. Fleming, Leslie, and Grey, had each a number of articles that elicited much admiration. We are glad to find the Toronto Horticultural Society making steady progress, and trust our citizens will extend to it the patronage which it so richly deserves.

#### RECENT IMPORTATION OF IMPROVED STOCK.

William Ashton, Esq., of Cruikshank Park, near Galt, informs us that he had just received from England, in excellent condition, the following Durham cattle:—*Rattler*, bull, 5 months old, by *Gilliver*, 11,529, dam *Rosebud*, by the *Earl of Durham*, 5,965.

*Melody*, heifer, rising three years, by *Valiant*, 10,989, dam *Mi*, by *Tom O'Lincoln*, 8,714.

*Lady Evelyn*, heifer, one year, by *Valliant*, dam *Etiquette*, by *Robin Hood*, 8,492.

*The Ocean*, heifer, calved on the passage, June 1, 1854, by *Rivington*, dam *Melody*; a fine handsome calf, and doing well. We are in possession of full pedigrees.

Mr. Ashton likewise imported with the above, six ewes and two rams of pure Leicesters, from the celebrated stock of William Sanday, Esq., of Nottingham. We wish him, and all others similarly engaged, every success in the important undertaking.

#### IMPORTATION OF SOUTHDOWN SHEEP.

We learn that Mr. John Spencer, of Dorset Farm, Brooklin, Whitby, has recently imported some excellent specimens of Southdowns, carefully selected from the best flocks in the counties of Surrey, Hants and Dorset. We are glad to find Mr. Spencer persevering in his valuable undertaking.

#### THE HARVEST, MARKETS, &c.

The wheat harvest in forward sections of the country is now fast drawing to a conclusion. From all we can learn the crop will prove upon the whole an average, but in some exposed situations the plant was much killed out by the severe spring frosts. All kinds of spring grain will prove abundant. Hay is not so heavy as was anticipated from the copious showers which fell in Spring. The heavy storms which occurred last month in many parts of the Province injured more or less the wheat, twisting it about and causing it to fall where stout. This has rendered harvest operations tedious and expensive. Farmers experience great difficulty in obtaining hands, even at exorbitant wages; two and even two and a-half dollars per day, being frequently given. Hops, we are told, are looking well, and potatoes and root crops generally are the same. The accounts from the States and Europe are, upon the whole, favorable, and notwithstanding the continuance of the war, prices have commenced declining in the principal markets of the world. Much however, will depend so far as the United Kingdom is concerned, on the state of the weather during the present and succeeding months.

August 1st. 1854.

#### WATERING TROUGH LAW.

A Law at present exists in the State of Maine, that country so celebrated for its admiration of pure unadulterated cold water—which is really deserving of commendation and imitation, and if adopted by some of our municipalities in Canada, might be the means of affording comfort and refreshment to many a weary traveller or animal. By this law, passed April 9, 1852, any person, in any city, town or plantation in the State, who shall construct and maintain, and keep in good repair, a watering trough beside the highway, and well supplied with water, the surface of which shall be at least two feet and a half above the ground, and made easily accessible for horses and carriages, shall be allowed a reduction of three dollars from the annual amount of his taxes.



## PROVINCIAL EXHIBITION,

TO BE HELD AT LONDON, SEPT. 26, 27, 28 & 29, 1854.

Preparations for holding the next Provincial Show are in active progress, with every prospect of a successful result.

Exhibitors must become members, by paying one dollar, which entitles them to a Badge, by which they can have free access to the Show during its continuance, and can enter for competition whatever they choose, without any further charge. A badge admits the *wearer only* to the Exhibition. Those who are not members have to pay 7½d. each admission. Ladies, Indians, and Foreigners can exhibit without paying members' fees.

Blood Horses and Thorough-bred Cattle must be entered, and have their pedigrees properly attested, and sent to the Secretary in Toronto, *not later than Wednesday, Sept. 20th*. After the 21st entries will be taken at London. Competitors are recommended to make their entries as early as practicable. *Entries will positively close on Wednesday morning, Sept. 27th at 9 o'clock; all entries made after Tuesday Sept. 26th will be charged one dollar each.*

Agricultural Societies are urgently requested to forward lists of Delegates and Judges to the Secretary of the Board of Agriculture, Toronto, without delay. Competitors have the privilege of recommending Judges, and are requested to do so.

Premium Lists, containing regulations &c., may be obtained by applying to the Society at the Office of the Board of Agriculture, Toronto; or to J. B. Strathy, Esq, Secretary and Treasurer of the Local Committee, London.

## THRESHING GRAIN.

A Correspondent of the *Southern Planter* says:—

"For the comfort of those who feed Threshing Machines where there is much dust in the wheat, I will say, it is the experience of my feeder (who has suffered much from the dust in his throat) that one swallow of oil, (which should be the best lamp oil,) when he stops at night, will relieve one from all the unpleasant effects of the dust. This is his experience after ten years experience, and as it may give relief to many a fatigued and suffering poor fellow, I communicate it to the Planter."

## NEW YORK STATE FAIR.

We have received a copy of the Prize List for the New York State Fair, to be held this Autumn, from which we make the following abstract of the intended proceedings:—

This, being the Fourteenth Annual Fair and Cattle Exhibition of the New York State Agricultural Society, will be held in the City of New York, October 3rd, 4th, 5th and 6th, 1854. The American Institute having omitted their Annual Show, and united in this Exhibition, it is believed that it will be one of the most interesting and important Exhibitions ever held in the State.

Hamilton Square comprises eighteen acres of ground, which has been tendered by the corporation for the use of the Society, all of which will be enclosed and arranged in the most convenient manner for the satisfactory exhibition of Stock and articles. Erections and enclosures will be prepared for each department, so that articles and Stock will be entirely protected. The Premium List, in addition to New York State, embraces a very large class of premiums to persons out of the State, and it is believed a large competition will be secured in that direction.

The amount of premiums embraced in the list exceeds Eight Thousand Dollars; and it is believed a more attractive list has never been offered to the farmers, mechanics and manufacturers of the State.

Hamilton Square is bounded by the Third and Fourth Avenues on two sides. The Third Avenue cars pass it on one side, and the Harlem on the other; and stock and articles sent by the Harlem and New Haven roads can be deposited very near the grounds, and those by the Hudson River railroad not far distant.

Breeders of Stock, Implement makers and manufacturers, from all parts of the country and the British Provinces, are invited to attend and exhibit their Stock, Implements and Manufactures.

THE ORDER OF ARRANGEMENTS IS AS FOLLOWS:

On Tuesday, October 3.—Stock and articles will be arranged, and Judges called, at 3 P.M.: vacancies filled and Grounds open to visitors, at 12 o'clock.

On Wednesday, October 4.—Judges will commence the discharge of their duties, and the public admitted at 9 o'clock. Tickets 25 cents, single admission; Members' and Exhibitors' tickets and badges, \$1, to be obtained at the Treasurers' office.

On Thursday, October 5.—Plowing and Spading Match at 10 A.M., and exercise of Horses in the Ring.

On Friday, October 6.—The Exhibition and Trial of Horses in the Ring will take place during the day, and Prize Animals exhibited at 12 o'clock.

Address on the Show Grounds, under the Society's large Tent, at 1 P.M., after which premiums will be awarded.

Members of the Society, and all who may become such at the Fair, by the payment of one dollar, will be furnished with badges and five tickets, labelled "admit a member," which will admit them and members of their family, on presenting the badge and delivering up a ticket for each person admitted. Single tickets 25 cents, admitting one person, will be issued on Tuesday at 12 o'clock, October 3rd, at the Treasurer's office on the Show Grounds.

Exhibitors are reminded that the days selected for the Fair are Tuesday, Wednesday, Thursday and Friday, 3rd, 4th, 5th and 6th of October.

Exhibitors must become members of the Society.

Life Members will be furnished with badges, admitting them at all times, on exhibiting their badge.

Carriages will be allowed to enter the Grounds—\$1 for two horse carriages, fifty cents for single carriages, and twenty-five cents for each person in carriages—under the direction of the committee of arrangements.

Persons intending to become Exhibitors are desired to forward to B. P. Johnson, Corresponding Secretary, State Agricultural Rooms, Albany, a list of their entries up to the 23d of September.

Stock and articles for Exhibition should be on the grounds the week previous to the Fair—as it is intended to have everything arranged ready for opening the Exhibition, on Tuesday morning, October 3d.

The fixtures will be in readiness by the 25th September, and person will be in attendance, after that time, to receive articles and arrange them in their proper places, and suitable guards provided for their security.

The office at the Show Grounds, Hamilton Square, will be opened September 25th, in addition to the other places in the city. The Corresponding Secretary will be at the Astor House the week previous to the Fair, where he will be happy to meet gentlemen interested in the Exhibition, and desirous of information in reference to it; and the Treasurer, at Janes, Beebe & Co.'s, 356 Broadway, where every necessary information will be given.

The Premiums for Essays and Experiments, Plowing, Agricultural Implements, Manufactures, other than domestic, Vegetables, Foreign Fruit, Machinery, Miscellaneous and Discretion-

ary articles, as well as Stock, will be open to competition out of the State.

The American Institute having resolved to hold their annual Agricultural Fair in connexion with the Society, and the New York Horticultural Society having united their Exhibition with that of the Society, it is believed that the united exhibition will be one of the best ever held in this country, and specially deserving the attention of breeders, farmers, horticulturists, manufacturers and mechanics, in every section of our country.

# GREAT CATTLE SALE AT GUELPH.

Mr. Parsons' great sale of Durham stock, came off duly, as advertised for some time in the *Agri-culturist* and other papers, on Tuesday, 26th June last, at Mr. Parsons' residence, Culdaffe Farm, near Guelph. The sale was probably the largest of the kind, and the prices realized on the whole the highest that have yet been obtained in Canada West. The sheep and hogs, also advertised, were not sold, as the sale commenced too late in the day. Refreshments for the purchasers and visitors were provided by Mr. Parsons, in the most hospitable and elegant style. We have been favored with a list of the animals sold, and the prices obtained, and which will be found below. The total proceeds of the sale, it will be seen, amount to about \$4,300, being an average of over \$100 each. The list of prices will no doubt be interesting to farmers generally. It is as follows:—

## THOROUGHbred COWS.

|                                     |       |
|-------------------------------------|-------|
| Young Lady Day—James Wright, Guelph | \$140 |
| Red Lily—Mr. Davis, County York     | 140   |
| White Rose—W. J. Brown, Guelph      | 90    |
| Laura—William Whitlow, do           | 180   |
| Lady Ann—Wm. Applegarth, Hamilton   | 195   |
| Lily 2nd—Capt. Berestord, Newmarket | 300   |
| Lily 3rd—Jacob Hespeler, Preston    | 340   |
| Red Rose 2nd—John Brockie, Nichol   | 100   |

## THOROUGHbred TWO-YEAR-OLD HEIFERS.

|                                      |     |
|--------------------------------------|-----|
| Red Rose 3rd—Wm. Cooley, Ancaster    | 235 |
| Lady Day 2nd—W. Applegarth, Hamilton | 235 |

## THOROUGHbred ONE-YEAR-OLD HEIFER.

|                              |     |
|------------------------------|-----|
| Lily 4th—F. W. Stone, Guelph | 150 |
|------------------------------|-----|

## THOROUGHbred HEIFER CALVES.

|                                    |     |
|------------------------------------|-----|
| Lady Ann 2nd—W. J. Brown, Guelph   | 155 |
| Lily 5th—do do                     | 150 |
| Laura 4th—J. W. Armstrong, Eramosa | 100 |

## THOROUGHbred BULLS.

|                                  |     |
|----------------------------------|-----|
| Adam—Capt. Beresford, Newmarket  | 240 |
| Culdaffe—Jacob Hespeler, Preston | 275 |



## THOROUGH-BRED BULL CALVES.

|                                   |       |       |
|-----------------------------------|-------|-------|
| Don—Henry Stewart, Woodstock      | - - - | 155   |
| Oscar—W. J. Brown, Guelph         | - - - | 155   |
| Dan—Archibald F. Sherratt, Nichol | - - - | 80    |
| 11 Grade Cows brought             | - - - | \$518 |
| 2 Two-year-old Heifers            | - - - | 113   |
| 8 Calves                          | - - - | 167   |

Terms—nine months credit.

The result of the sale, being the most important of the kind, we believe, that has taken place in the country, is highly encouraging and will no doubt stimulate stock breeders to renewed exertions. The Guelph Herald says:—

“It is worthy of remark, that Mr Parsons’ stock was collected and raised, not merely for the purpose of sale, but specially for Dairy purposes—a pursuit in which he has obtained no small celebrity and success, and from which he has only been induced to retire, in the meantime, in consequence of domestic arrangements. With the increased facilities that will soon be obtained, from the introduction of Railways, we are persuaded that Dairy farming might be profitably cultivated in the vicinity to a much greater extent than at present obtains.”

In reference to the above sale, we have to congratulate our friend Mr. Parsons on its results, and we hope others may be induced with the like skill, energy, and perseverance to follow in his steps. Considering it is the first sale of the kind that has taken place in the Province, we cannot but remark that such prices augur well for the future, and we earnestly hope that those whose circumstances and taste will allow of it, will use their utmost endeavours to encourage the importation and breeding of all kinds of improved stock: the good rendered thereby to the country would be incalculable. The dispersion of such a famed herd for its milking properties, must be very beneficial to the Province at large; and we hope its former owner is well repaid for the pains he has taken, and for the outlay which the raising of such a herd must have cost him. And if the eight head of thorough-bred cattle which we remember hearing Mr. Parsons speak of as having sold last year, had also appeared on the ground, the collection would indeed have been still more gratifying.

WEIGHT OF EGGS.—The average weight of a newly-laid egg is about  $3\frac{1}{4}$  oz.; the white generally weighs  $1\frac{1}{4}$  oz.; the yolk  $1\frac{1}{4}$  oz.; and the shell and skin  $\frac{1}{4}$  oz.

## SALE OF SHORT-HORNS.

Mr. Stafford conducted the sale of the herd of pure short-horn cattle, the property of J. C. Grant Duff, Esq., of Eden, Aberdeenshire, on the 24th of May last. The following were among the sums realised, together with the names of the purchasers:—

|                                                                                                                                                                  |     |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| Jenny Lind, red, calved 17th March, 1847—Mr. Tanqueray, Brent Lodge, Hendon, Middlesex                                                                           | 100 |
| Miss Bates the Second, red and white, calved 21st January, 1849—Mr. J. G. Wood, Castle Grove, Strabane, Ireland                                                  | 70  |
| Pure Gold, roan, calved 25th January, 1849—Mr. Cruickshank, Sittytton                                                                                            | 91  |
| Manganese, red, bred by Sir Thomas Cartwright, calved 14th February, 1849—Mr. Longmore, Rettie                                                                   | 90  |
| Monika, red, calved 17th March, 1849—Mr. Lyall, Kincraig, Brechin                                                                                                | 95  |
| Iris, roan, calved 8th June, 1850—Mr. Tanqueray, Brent Lodge, Hendon, Middlesex                                                                                  | 95  |
| Flora Fourth, roan, bred by Mr. Trotter, calved 8th December, 1850—Mr. Wilson, Cumledge, Berwickshire                                                            | 50  |
| Rosewood, roan, bred by Mr. Cruickshank, Sittytton, calved in February, 1852—the Duke of Richmond, Gordon Castle                                                 | 66  |
| Pallas, red and white, calved the 28th April, 1852—Mr. Scott, Byres near Fochabers                                                                               | 90  |
| Astræa, light roan, calved 4th May, 1854—Mr. Tanqueray, Hendon, Middlesex                                                                                        | 65  |
| Venus, red and white, calved 4th June, 1852—Cartwright, Aynhoe Park                                                                                              | 95  |
| Thirty cows, heifers, and heifer calves yielded 1555 guineas, or upwards of 50 guineas each: 10 bulls and bull calves yielded 278 guineas, or nearly £30 apiece. |     |

## CANADA, BEGINNING TO BE UNDERSTOOD AND APPRECIATED AT HOME.

[We subjoin the following leading article, without abridgement, from the *Gardener's Chronicle and Agricultural Gazette*, of June 3rd, under the able editorship of Professor Lindley. The expression of opinions like those which follow, in the most influential journals of Britain, cannot fail to awaken attention to the claims and advantages of this immense and prosperous portion of Her Majesty's dominions. The princely banquet lately given to our esteemed and noble-minded Governor, in the metropolis of the Empire, was indeed the highest compliment which Britain's most distinguished Statesmen, of all political parties, could pay to Canada, and as such we gratefully accept it. It will be remembered that on that most auspicious occasion both Lord Elgin and Mr. Hincks, in returning thanks, delivered speeches alike worthy of themselves and the country they represented. We are glad

to find that the talented and indefatigable Secretary of our Board of Statistics, Mr. Hutton, has, during his recent visit to England, prepared and published a pamphlet on a subject which he has both ability and disposition to handle fairly and masterly, the result of which must be in the highest degree beneficial to this country.—EDITOR.]

• We are not anxious to give advice to emigrants, although continually solicited to do so. A man's temperament, means, habits, and peculiarities, exercise so great an influence upon his destiny, that it requires a considerable acquaintance with him for even the most sagacious friend to know where in the wide world he is more likely to be successful than at home. It will, therefore, be easily understood why we shrink from the responsibility of saying that which may determine, whether for good or for evil, the future destiny of any correspondent. Nor is it easy to know what value to attach to the reports which reach Europe concerning distant colonies. That statements are very often overcolored—unintentionally, perhaps—is certain. Nor can it well be otherwise; for if it is natural for a man to eulogise the country in which he has created his fortune, it is equally his interest to say whatever will attract thither the population which will increase the value of his property. And, on the other hand, he who fails assigns his want of success to anything rather than his own unskillfulness, imprudence, or lethargy. The one exaggerates what is good, and overlooks the reverse; the other exaggerates what is evil, and forgets the unquestionable good.

Men of skill and energy will succeed in any colony. To them advice is needless. It is those who have no confidence in themselves, no judgment, no self-reliance, but need to be sustained by continual reference to others who require to be told, if not where they may most certainly succeed, at least where they are least likely to fail.

Without depreciating any other colony, for nearly all have their peculiar advantages, we may safely say that no part of the world now presents such undoubted opportunities of acquiring rapid independence as the British Possessions in North America, and more especially Canada. The natural wealth and colonial industry in the latter country was attested in 1851, by the rich collections which Canadians sent to the great Exhibition of all Nations, and which placed it above all parts of the Empire except India. And we have now a perfectly trustworthy account of its resources in the statistical and social details lately published by Mr. William Hutton\*, a gentleman who is well known in this country, and whose exactness is unquestionable.

It was only the other day, on the occasion of a public dinner given to the Earl of Elgin, that Lord John Russell, in speaking of the noble Lord, took the opportunity of saying that it had been Lord Elgin's duty to act the part of a constitutional king over a province which has been continually

prospering and increasing under his care; which has risen from a little more than a million to two millions of revenue, which has increased in a short time from 600,000 to 1,800,000 population, and the imports and exports of which have shown year by year the symptoms of increasing trade, and improving industry. Such a declaration, from such quarter, was no unmeaning phrase, but the announcement of a great Colonial fact, the knowledge of which cannot be too widely dispersed.

The reply of the noble lord, to whom the destiny of Canada is once more confided, deserves a far more permanent record than the fleeting columns of a daily journal.

"I have had the good fortune," said Lord Elgin, "within the last two or three months, to be present twice at great banquets held in honor of governors of East Indian presidencies, and attended by many distinguished persons in this country. I confess that when I listened to the glowing pictures of the prospects of India submitted to those audiences, and duly spread over the country through the instrumentality of the press, I could not help feeling something of a jealousy and regret that no similar opportunity was given for calling the attention of the people of this country to that great western dependency which, though it is no doubt inferior in wealth and importance to India, and though its condition in many respects even contrasts strikingly with the condition of India, is not inhabited by native tribes, but by a population drawn from the most energetic and active races, Englishmen, Frenchmen, Irishmen, and Scotchmen, and is bordered, not by effete and decayed empires, but by a youthful and vigorous republic, whose distinguished representative has honored us with his company this evening, and between whose country and the people of Canada generally, give me leave to say that nothing but feelings of mutual respect and gratitude are entertained. (Hear, hear, hear.) Well, gentlemen, your great kindness to me personally has provided such an opportunity, and I believe that very few persons without the walls of this room form an adequate conception of the magnitude of the question with which we are dealing, when we talk of the interests and future of Canada. (Cheers.) This Canada of which we speak so glibly, is the great heart of British America, and the greater part of the northern continent of America is still British. True, a large portion of that region is barren and inhospitable, but as to Canada—and I may join with it the sister provinces—it is notorious that it contains a territory capable of sustaining many millions of inhabitants, and is inferior in salubrity, fertility, and everything that can make residence desirable to persons of our race, to no part of the American continent. (Cheers.) And as to its being the more northern part of the continent, I am obliged sometimes to say to our Canadian fellow-subjects, when, with that modesty and diffidence which distinguish them, they vaunt of the great qualities of their southern neighbors, that in England, when we say that a man is too far north for another, we do not mean to say that he is not likely to be his match; and that if the Canadian people

\* Canada; its Present Condition. Prospects, and Resources fully described for the Information of Intending Emigrants STANFORD, Charing Cross. (A Pamphlet.)



only make the most of their great resources and advantages, this proverb will become quite as significant in America as it is in Britain.—(Cheers.) This magnificent country, the noble inheritance of the British people, and *which is now brought by the agency of steam within a week's distance of our shores*, is at this moment in a condition of prosperity altogether unexampled, and is affording, to an extent which its previous history furnishes no parallel, a profitable field for the investment of English capital, and a congenial home for the subjects of her Majesty of all ranks of life. (Cheers.) I can add that a spirit of loyalty and attachment to the Queen pervades all classes of the colonists, whose institutions, as far as circumstances will permit, are now happily a faithful imitation of those of the mother country. (Hear, hear.) The people of Canada, divided as they are into different races, and religions, and notwithstanding their party disputes, yet recognize the fact that the common interests which unite them are greater than the causes of division."

It is seldom that a more eloquent description of colonial prosperity has been given; nor was its truth undeserving the brilliant language in which it was conveyed. The cheers of those who surrounded Lord Elgin, proceeded from eminent personages perfectly conversant with the facts. Had it been otherwise the statements now published by such an authority as Mr. Hutton, who is the Secretary to the Government Board of Statistics in Canada, more than confirm all that was said on the occasion. He is himself, we understand, an instance of the success which may attend the Canadian emigrant: having in 20 years risen to rank and fortune from a very small beginning, he is intimately acquainted with the country, knows its advantages and disadvantages, and indicates the one with the same unreserve as the other.

That Mr. Hutton's book will be very extensively read we entertain no doubt; without, therefore, attempting to deal with its details, which would be impossible in the space we can afford, we must be contented with selecting a few of the more striking facts. Although 5s. to 6s. 3d. currency are paid per day to harvest-men, yet such is the excellence of the climate that Wheat can be housed for 6s. sterling per acre, including all expenses; in fact the sheaves can be carried as soon as they are made up. Hay costs about 2s. an acre to cut, average about 1½ tons per acre, and is worth 35s. currency per ton. Timber, as is well known, forms one of the great sources of Canadian wealth; the black Walnut wood of the country is exported to the United States. Land heavily timbered costs for clearing and fencing in about £3 5s. sterling an acre, and is immediately ready for a crop of Wheat. "This cleared land is raised in value to the extent of the cost of clearing and fencing, and will generally sell freely for that sum extra the price of the same land wild. The upset price of the best Government land is 6s. 6d. sterling per acre; but on the one hand, while excellent land may be had even at 1s. 3d. to 3s. 6d. sterling, many lots cannot be had under 30s.,

and wild land in excellent situations has been known to sell for £2 10s. The taxes on a farm of 250 acres (175 cleared and 75 wild), are *in all* £4 10s. The number of pupils in common schools of all kinds, in a population of 950,000, has increased in ten years from 66,000 to about 180,000. Crime is so rare, that on a late occasion in three counties containing 80,000 inhabitants, the judge had not a criminal to try.

We cannot pursue this matter further for the present; nor is it necessary, for Mr. Hutton's pamphlet is so cheap as to be within any one's reach. It will be sufficient to quote what he says respecting the class of men best suited for emigration, among whom, if he does not name gardeners, it is no doubt because he classes them with farmers or laborers.

"Canada is the country, perhaps, above all others where the diligent practical man, no matter to which of these callings (capitalist, farmer, merchant, manufacturer, mechanic, or laborer), he belongs, reap an ample reward for his industry. Wages of labor, in fact, are so high that none but working men, in the wide sense given to that word, can possibly prosper—mere *over-seers* cannot breathe in our atmosphere.

"The chief profit that the farmer makes is by doing his own work by himself and family, and thus not only saving outlay of cash for wages, but earning those wages for himself; thus, for instance, the man who hires another to do his work, say at 5s. per day, and remains idle himself, loses his 5s. which might have been the reward of his personal industry and is tempted by that very idleness to spend still more; and his neighbor, perhaps, who performs his own work himself, is 10s. richer than he when night comes. It is thus that Canadian farmers, who are a most industrious class, soon accumulate means to pay for their holdings and render them freeholds.

"In the Upper Province there is scarcely such a thing known as a tenant farmer; we are almost all our own landlords, or working our way up to that proud position; not one farmer in 500 pays *rent so called*."

#### THE CURRENCY.

It may be of interest to farmers to be reminded that the Currency Act passed last Session comes into operation on the first of the present month, (August.) The Act makes no actual change in the value of any of our current money. It merely makes the denominations: dollars, cents and mills, equally legal with those of pounds, shillings and pence. The following, on the subject, is from the *Montreal Herald*:—

The Act, it will be remembered, was passed after a refusal on the part of the Imperial Government to sanction some acts on the currency, which were previously passed at Quebec. All

former currency acts are repealed, and it is enacted that the denomination of money in the currency of this Province shall hereafter be pounds, dollars, shillings, pence, cents and mills; the pound, shilling and penny, shall have, respectively, the same proportionate values as they now have. In any agreement or statement as to money, either denomination may be lawfully used. The pound currency is to be of 101 321-1000 grains, Troy of gold, the standard of the United Kingdom; the dollar to be one-fourth of the value. The pound sterling to be £1 4s. 4d., or \$4 and 86 $\frac{2}{3}$  cents currency, and to be a legal tender for that amount. Less British gold coins to be also a legal tender for proportionate rates.

Public accounts to be kept in the denominations of coin prescribed by Her Majesty. Accounts may be kept or stated, or agreements made, however, to be legally binding, in either class.

Such silver coins as may be struck at the Royal Mint, of the fineness now fixed by law for the coins of the United Kingdom, and of weights bearing respectively the same proportion to the value to be assigned to such coins in this Province, which the weights of silver coins of the United Kingdom, shall, by such names as shall be assigned to them by Her Majesty in her proclamation, declaring them lawful money of this Province, be a legal tender at the rates assigned in such proclamation.

Until otherwise ordered by Royal proclamation, the silver coins of the United Kingdom shall pass current for sums in currency according to the proportion hereinbefore fixed to the sums in sterling, for which they pass current in the United Kingdom, and no other silver coin than those declared so by this act shall be a legal tender for more than £2 10s. currency.

The copper money of the United Kingdom to pass current and be a legal tender to the amount of 1s. currency, and no more, that is to say, the copper penny, two cents; half-penny, one cent; and other subdivisions proportionably. Provided that any copper coins of like weights which Her Majesty may direct to be struck for the purpose shall be a legal tender, at the like rates, to the above-mentioned amount; and Her Majesty may declare by proclamation that the copper coins of the United Kingdom shall not be lawful current money of the Province.

The American Eagle coined before the 1st of July, 1834, is to be a legal tender, and to pass current for \$10 36 $\frac{2}{3}$  cents or £2 13s. 4d. currency; coined after that day and before the 1st of January, 1852, or after that day, but while the same standard of fineness is retained in the United States mint, and weighing 10 dwts. 18 grs. Troy, shall pass current for \$10, or £2 10s. cy.; and Gold coins the multiples or halves of the above of the respective dates, to be current for proportionate sums.

Other gold coins may be made current by Her Majesty's proclamation, at rates to be assigned in such proclamation; such rates being proportionate to the quantity of pure gold in such coins, reckoning ninety-two and eight hundred and seventy-seven thousandth parts of grains to one pound currency.

## RUTTAN'S VENTILATING CAR.

[We take the following notice from a late number of the *Scientific American*. Since the article was written, we are informed that Mr. Ruttan has succeeded in rendering his arrangements for ventilating railway cars in summer, and freeing them of dust, more complete and efficient, so as to meet at once a principal want felt by all railway travellers. When the annoyance and injury to health occasioned by impure air, sudden changes of temperature, dust, &c., are properly considered, Mr. Ruttan's persevering labors in the needful work of ventilation, cannot fail to receive the thanks and patronage of a discerning public.]

We were present a few days since at the trial trip of a new Ventilating Car, invented and patented by H. Ruttan, of Cebourg, C. W. The car is now running on the New York and Erie Railroad. The plan of construction is to take a supply of fresh air from the top or sides of the car by a funnel-shaped opening, pass it down to the bottom of the car over a water tank to free it from dust and cinders, and introduce it to the inside through a double stove in winter, and a pedestal in summer. The current of warm air in going out of the car passes its whole length beneath the passenger's feet, and is discharged at the rear.

The experiment was highly satisfactory, every conductor on the route spoke highly in its favor, and said that passengers were unanimous in their approval. The only complaint we heard was from a single individual, who complained that the air was too fresh, but as the temperature was pretty constant at about 65°, there could be no just cause of complaint on this score. There was a singular equality of temperament throughout the car. Indeed, at one time the thermometer indicated the coldest portion to be the part nearest the stove. We noticed during the latter part of the trip a fact which spoke volumes in its favor. Every seat in the car was occupied, and there were even several standing in the passage. On going to the other car, which was one of the ordinary construction, there were only about a dozen passengers, yet even with this difference in the consumption of oxygen, the change in the smell of the air was decidedly disagreeable.

We are acquainted with no plan of car ventilation which we consider as good as Mr. Ruttan's, and are disposed to think that when he shall have made some contemplated alterations, rendering it more simple and at the same time more thoroughly efficient in freeing the air from dust, his plan will be nearly all that can be desired. We can only say in conclusion that railroad companies deserve and will certainly receive the censure of the public unless they adopt this or some better plan, (if a better one is to be



had,) of car ventilation. Railroad travelling as at present conducted is often little better than slow torture. That route between New York and the west, which will adopt early this summer some good ventilator like Mr. Rutan's, will receive three-fourths of the travel.

### INTRODUCTION OF DOMESTIC ANIMALS.

The following account of the introduction of domestic animals into America has been condensed from the United States Census Report. It furnishes a clue to the origin of our native cattle :

The first animals brought to America from Europe were imported by Columbus, in his second voyage, in 1493. He left Spain as admiral of seventeen ships, bringing a collection of European trees, plants, and seeds of various kinds, a number of horses, a bull, and several cows.

The first horses brought into any part of the territory at present embraced in the United States were landed in Florida by Cabeza de Vaca, in 1527, forty-two in number, all of which perished or were otherwise killed. The next importation was also brought to Florida, by De Soto, in 1539, which consisted of horses and swine, among which were thirteen sows; the progeny of the latter soon increasing to several hundred.

The Portugues took cattle, and swine to Newfoundland and Nova Scotia in the year 1553. Thirty years after, they had multiplied so abundantly that Sir Richard Gilbert attempted to land there to obtain supplies of cattle and hogs for his crew, but was wrecked.

Swine and other domestic animals were brought over to Arcadia by M. L'Escarbot, a French lawyer, in 1604, the year that country was settled. In 1608 the French extended their settlement into Canada, and soon after introduced various animals.

In 1609, three ships from England landed at Jamestown, in Virginia, with many immigrants, and the following domestic animals, viz: six mares, one horse, six hundred swine, five hundred domestic fowls, with a few sheep and goats. Other animals had been previously there. In 1611, Sir Thomas Gates brought over to the same settlement one hundred cows, besides other cattle. In 1610, an edict was issued in Virginia, prohibiting the killing of domestic animals of any kind, on penalty, of death to the accessory and twenty-four hours' whipping to the concealer. As early as the years 1617 the swine had multiplied so rapidly in the colony that the people were obliged to palisade Jamestown, to prevent being overrun with them. In 1627, the Indians near the settlement fed upon hogs, which had become wild, instead of game. Every family in Virginia, at that time, which had not an abundance of tame hogs and poultry was considered very poor. In 1648, some of the settlers had a good stock of bees. In 1667, sheep and mares were forbidden to be exported from the province. By the year 1723, or before, sheep had somewhat multiplied, and yielded good fleeces.

The first animals introduced into Massachusetts were by Edward Winslow, in 1624, consisting of three heifers and a bull. In 1629, twelve cows were sent to Cape Ann. In 1629, one hundred and fifteen cattle were imported into the plantations on Massachusetts Bay, besides some horses and mares, and several ponies and forty-one goats. They were mostly ordered by Francis Higginson, formerly of Leicestershire, whence several of the animals were brought.

The first importation into New York was made from Holland, by the West India company, in 1625, comprising one hundred and three animals, consisting of horses and cattle for breeding, besides as many sheep and hogs as was thought expedient.

### A CURE FOR PIG DISTEMPER.

To the Editor of the *Agriculturist* :

SIR,—Having noticed in a former number of the *Agriculturist* a request from one of your correspondents desiring information regarding the treatment of pigs, infected with a disease to which they are very often liable, commonly known as an affection of the brain, causing complete blindness and stupidity, excepting a natural instinct which impels them to seek a covering for their heads in the nearest fence or bush, and when that desire is attained, like the Ostrich in time of danger, they stand perfectly still, and unconscious of all commotion that may take place around them. This is a distemper very prevalent, and if relief is not speedily afforded is very destructive to swine. They are liable to be affected with it at all ages, but most generally when between three to six months old, and in many instances that have come under my observation it has singled out the very best of the herd for its prey.

If you will be kind enough to give the following simple remedy an early insertion in a corner of your valuable paper, you will doubtless confer a favor upon your correspondent and others who may be under the disagreeable necessity of administering relief to any of their *grunters* so distressed. Take a sharp knife and split the skin and flesh to the bone straight down the middle of the forehead, beginning at the top of the skull and drawing it down to a level with the eyes, after allowing it to bleed for a few minutes take a quantity of common salt and rub it into the orifice made by the knife. The cure is seemingly effected by the bleeding, and the irritation caused by the salt over the immediate location of the disease. Though the operation may appear a little barbarous, it is attended with no danger, and in every instance where it has been performed the results have been perfectly successful.

Yours respectfully,

J. K. GORDON.

Whitby, 12th July, 1854.

A lump of wet saleratus applied to the sting of a wasp or bee, will stop the pain in one moment, and prevent it from swelling.

TUSSER, THE AGRICULTURIST.

[We take the following remarks from a lecture recently delivered at Kelvidon, in England, by Mr. Crane, on the life and writings of the quaint author of "The Five hundred Points of Good Husbandry," who flourished in the sixteenth century.]

In early youth his father seems to have destined him for the church, then in the throes of the Reformation, and he was sent to the collegiate chapel of the Castle of Wallingford. This arose probably from his possessing an unusually musical voice, and he speaks of it as quite against his own will, as well as that of his mother. After a harassing time, apparently at different places, leaving us to infer that his voice was the cause of his trouble, he ultimately reached St. Paul's and speaks with gratitude of his progress in music under the celebrated John Redford, organist and almoner of that cathedral. From St. Paul's he went to Eton, where he experienced sharp discipline, and probably good teaching, for he progressed to Trinity Hall, Cambridge. He recounts the pleasant way in which his time passed here "with learned men;" but was driven by long sickness to leave his books and seek his fortune at the court, where he obtained employment, probably in his musical capacity, through the influence of his patron, William Lord Paget, the first titled ancestor of the Anglesey family, of whom he speaks in terms of affectionate gratitude. He remained in this position about ten years, which must have been during the latter part of the reign of Henry VIII., and the first years of Edward VI.; his patron, who had been in great favour, about this time fell into disgrace, and was sent to the Tower; and Tusser, being disgusted, as he says, with the vices of the courtiers, and his views probably baffled by the fall of his patron, for, he says, "the court began to frown," married, and began business as a farmer at Catwade, a hamlet in the parish of Brandham, in Suffolk, on the river Stour, which divides that county from Essex. One could scarcely imagine a less eligible training for the calling than his had been, as a singing boy, student, courier, and musician. He must then have been over 30 years old, and started apparently ignorant alike of the theory, if there were theorists of those days, and the practice, rude as it then was, of husbandry.

It was here that he composed, or "devised," as he terms it, his "Book of Husbandry," the first edition of which was published in 1557, and dedicated to his patron William Lord Paget, who, having adhered to the Popish party, regained his influence, and held the office of Lord Privy Seal under Mary. He must have been engaged in farming for some years before producing even the rude essay which first issued from the press, and which formed the germ of his more perfect work, for in it is found a correct outline of agriculture, which could only be drawn by a practised hand, and the filling in and finishing of the picture seems to have been the solace and the business of his future life. This was the second book on agriculture that was printed in the English language, Fitzherbert's "Book of Husbandrie,"

being the first. The work seems to have become extremely popular at once, and edition after edition issued from the press, polished, amplified, and continual additions marking its growth. Within comparatively a few years of its first appearance, Tusser's work was reprinted upwards of 20 times, and yet scarcely a copy of these early editions has been preserved, a proof that it had been sedulously applied to those purposes of instruction for which it was so admirably designed. As is remarked in the "British Biographer," "some books become heir-looms from value; and Tusser's work, for useful information in every department of agriculture, together with its quaint and amusing observations, perhaps passed the copies from father to son, till they crumbled away in the bare shifting of the pages, and the mouldering relic only lost its value by the casual mutilation of time." Copies of the modern edition, by Dr. Mavor, published in 1812, are scarce, and I am indebted to the kindness of our honoured chairman for the use of that from which the present paper has been compiled. I can think of no piece of mediæval literature that seems to promise a more liberal return, in a pecuniary point of view, than a cheap reprint of the works of the old Rivenhall rhymist.

The illness of his wife, and the too probable embarrassment of his affairs, induced him to quit Catwade, and he is found successively at Ipswich, at Dereham Abbey, and at Norwich, at which latter place Salisbury, the then Dean, of whom he speaks in terms of warm gratitude, is supposed to have obtained for him the place of a singing man in the cathedral. Tusser, compelled to quit Norwich by a painful disorder, afterwards farmed the glebe and tithes of the parish of Fairstead, in our neighbourhood, where he seems, however, as usual, to have been unsuccessful. We find, even at this early period, that the tithes were evaded as much as possible; for though he himself repeatedly speaks of the honest payment of the impost as a religious duty, he attributed his own failure in some measure to the opposite practice of the parishioners of Fairstead—

"The tithing life, the tithing strife,  
Thro' tithing ill of Jack and Gill."

drove him from Essex to London, whence, frightened by the plague of 1574-75, he again sought Cambridge, and found an asylum in Trinity College, which had been founded since his youthful sojourn at the university. On the cessation of the plague he returned to the metropolis to get a living by his voice or his wits, and died there about the year 1580. He was buried in St. Mildred's church, in the Poultry, where an epitaph, probably written by himself, and which is given in Stow's "Survey of London," recorded his memory. This monument perished, of course, with the church, in the great fire of London.

For an author, the vicissitudes of his life present an uncommon variety of incident; "without a tincture of careless imprudence," says Warton, "or vicious extravagance, this desultory character seems to have thriven in no vocation;" and Fuller, in his "Worthies of Essex," quaintly remarks, "that his stone, which gathered no



moss, was the stone of Sisyphus. He was successively a musician, schoolmaster, singingman, husbandman, grazier, poet, more skilful in all than thriving in any vocation. He traded at large in oxen, sheep, dairies, grain of all kinds, to no profit. Whether he bought or sold he lost; and when a renter, impoverished himself and never enriched his landlord. Yet hath he laid down excellent rules in his 'Book of Husbandry and Huswifery,' so that the observer thereof must be rich. He spread his bread with all sorts of butter, yet none would stick thereon; yet I hear no man to charge him with any vicious extravagance, or visible carelessness." I might quote the testimony of many other eminent writers to the moral worth of our poet, and the merit of his rhymes, while all lament his ill success in life. In that age of quaint device and allegory, a scythe and whetstone seems to have been thought an apt emblem of poor Tusser. This is found in Peachum's "Minervà" a book of emblems, printed in 1612, with a poetical commentary, and the same idea is more tersely rendered in a work printed in 1641, entitled "Recreations for Ingenious Head-pieces, or a Pleasant Grove for their Wits to Walk in," thus—

"Tusser, they tell me, when thou were alive,  
Thou, teaching thrift, thyself could'st never thrive  
So, like the whetstone many men are wont,  
To sharpen others when themselves are blunt."

#### WHAT TIME SHALL WE CUT TIMBER?

*Never in winter, but always in summer.* It should be cut during the most rapid season of growth, and while that season is drawing toward a close. The same rule should be followed that skilful nurserymen observe in performing the operation of budding—that is, just as the *terminal bud* on each branch *begins* to form—as soon as it is first evident that the growth of the branch is about to terminate, but is *still in active progress*. Experienced tree-propagators have found that much earlier than this, the juices of the tree are in too thin or liquid a state to form a good adhesion between the bud and the peeled surface.—From the moment that the bark separates freely from the wood, these juices continue to thicken, until growth ceases altogether and the new wood is completely formed; and when this new wood is in the state of a thick paste or cement, then is the time that the bud will adhere most perfectly. This is the period when the bark may be peeled from the tree without destroying its vitality. And this is the time for cutting timber. Early in spring, the tree is full of sap, which is little else than pure water, and which has been gradually accumulating through winter by the absorption of the roots, with no outlet for its escape, as there is in summer through myriads of leaves. While the tree is thus replete with water, it is in the worst condition to be cut. But towards midsummer, when a portion of this water has passed off through the leaves, and the rest has been much thickened by conversion into material for wood, the case is very different; for while the watery sap promotes only decay, the thickened juices soon dry

and harden, and assist in the preservation of the wood.

We have recently been furnished with a number of facts, in corroboration of this opinion, by Isaac Hathaway, of Farmington, Ontario county, N. Y., an old and enterprising settler, a close and extensive observer, and who has had much experience in connexion with saw-mills and timber erections. All his observations tend to show the great difference between winter and summer cut timber, and induce him to think that, cut at the best period, it will last under the average of circumstances three times as long as when felled in winter. In one instance, a fence, consisting of winter-cut materials, a part split into rails, and a portion in round poles, of beech, maple, iron-wood, bass-wood, &c., had completely decayed in fifteen years, and none of it was even fit for firewood. In another case, a quantity of bass-wood rails were cut in summer, and split from the brown or heart portion of the tree. This was done about fifty years ago; thirty years afterwards the fence was quite sound, and even now some of the same rails remain undecayed, although much worn away by the weather. Winter saw-logs, left over one summer at the mill, are usually much decayed for several inches towards the interior; summer-cut logs, which have lain a like period, are always sound. He has cut hickory for axe-helves; if done in winter, decay soon commences, and the worm which loves this wood, often wholly destroys its value. Summer-cut, he has never known it to be attacked by the insect, and indeed it seems too hard for them to penetrate. He had occasion to examine several old frames of buildings, and in every instance where the period of cutting could be determined, the same striking difference in durability was conspicuous.

He related several experiments on the durability of posts, one of which is worthy of repetition.—In a gravelly soil, where the water never remains, a stone bottom a few inches thick was laid in the post-hole, on which the post was set, and was then surrounded with stone closely rammed in on every side. As a consequence, the water never remains long enough in contact with the post to soak its interior, as would be the case if damp earth passed its outer surface. Such posts consequently give promise of remaining sound, after some years trial, at least twice the period of those simply packed in earth. He also finds that posts of what is termed the white cedar in western New York, (the American *abovivæ*) last much longer when set green with the bark on, than if sawed and seasoned, which he attributes to the protection afforded by the durable bark, against the vicissitudes of rain and drouth, and the air and weather generally.\*

Now that the season is approaching, best adapted for timber-cutting, as indicated in the preceding remarks, we hope those interested will at least satisfy themselves on the subject by a fair and careful trial.—*Country Gentleman.*

\*In ordinary instances, however, above ground, the bark by preventing seasoning, only accelerates decay.

## Literary and Miscellaneous.

## EDUCATION ANALYSED.

BY MRS. M. F. H. THOMAS.

## CHAPTER I.

I have chosen to-day, a hacknied theme; yet the truth has not half been told, and though more correct ideas obtain at present, than formerly, upon this subject; yet error—countless errors, rife with incalculable mischief, are abroad in the land; stamped with the signet of fashion and even religious orthodoxy. Some understand by education, merely the routine of school studies—when little, “to sit on a bench and say A;” and when grown up, to finish their education at some fashionable school. Finish their education! In a world so full of the wonderful and unknown; cease to learn! Why there is but one—Omnipotence alone, who possesses all necessary knowledge; (for all knowledge is necessary), and when we shall have finished our educations, we shall be like Him—*Allwise*. Finish their education!! Their minds crammed with mere words, conned parrot like, without correct habits of thought, or real ideas of the world they inhabit, or their needs, mental or physical;—the nature and destiny of humanity—the aim and object of their life mission uncomprehended and unthought of. What a curse to humanity is such an education. Better awake in the mind one spark of free, earnest enquiry, and then leave it to grope its way in the path of knowledge without teacher or guide, then reduce it to a mere machine, or rather receptacle.

But a process of *stuffing* is no education. What avails any amount of knowledge if it be jumbled together in such inextricable confusion, that we have no command over it? Ideas are not *ours* unless available in the hour of need. Some people spend hours every day looking for mislaid things; and never have anything ready when wanted. So in the mental world. If ideas are, so to speak, thrust into the mind without arrangement, classification, or analysis, if retained at all; and they seldom will be; they are not easily called to mind; and of course, never ready in emergencies—of no use in every day life; for this is a world made up of emergencies. Travelling on a path where all is unknown before us; what the requirements of the next hour—of the very next moment, may be, we know not; and he only, whose ideas are ever at his command—whose “house is set in order,” is prepared for every issue. The worthlessness of *after wit*, who does not know? Those words—that homely phrase of regret, “*If I had only thought*,” are “household words.” And to “*think*” in time—to be ready; we must *reason* as well as learn. We must not only read but we must study the connections, relations, and adaptations which exist between different facts and phenomena, and so connect all ideas together in such a manner, that the suggestion of one will recall all analogous stored in the mind. It is the province and instinct of reason to discover relations—to trace analogies—to obviate apparent discrepancies; and demonstrate

in the whole universe that vast bond of unity which marks it the work of one great Allpervading, Allwise mind.

“All parts of one stupendous *whole*.”

One province of reason is to trace the relations between cause and effect, and the true reasoner as he traces back the chain of causation, finds all its apparent multiform shapes, gradually blending together, till all causes at last merge in the great first cause—“The God and Father of the spirits of all men.”

But to return. Others bend their wole energies to acquiring a knowledge of the art, or profession to which they trust for accumulating wealth, neglecting all other sources of improvement. In this case the mind is narrowed and unbalanced, by the exclusive exercise of a single set of faculties; and the consequence is, that not only is a source of great and legitimate pleasure lost; but partial views of all things are taken, and a habit of inattention to what else is passing around is formed. A word here upon *attention*. There is nothing more necessary to one who would acquire a correct and comprehensive education; than strict habits of attention to whatever is transpiring around him, to be wherever he may, except in his own closet—the only place for reveries. I know that meditative men are apt to walk like dreamers through the world—through society, rife with that problem of all others—man. He knows not how much he is losing. How many useful hints for the legislator, the teacher, the parent, the friend or neighbour—how much aid in settling the varied questions of social relations—how many clues to the bewildering labyrinth of existence are to be found in the casual circumstances, the careless words, and unstudied movements of every day life. Precious gems lost from the cabinet of thought. It was the habit of attention to physical phenomena that caused Newton to discover the law of gravity; and thereby enabled him to solve the problem of planetary motion. An apple fell to the ground—he *saw it*, and asked why. And here is another habit which should be joined with that of attention, viz: the habit of inquiring the reason, the *why* of all things. From Newton’s earnest study to find the cause of this simple phenomenon resulted the greatest discovery ever known. “Go thou and do likewise.”

Brooklin 18th July, 1854.

## WHAT A GARDEN SHOULD BE.

From the New England Farmer.

Having discussed Gardens at some length under their ornamental aspect, lest the accusation be brought that the useful has been forgotten, this article shall be devoted to the special consideration of the Kitchen Garden.

We are wrongly apt to associate with the word Garden, a corner of land filled with weeds and flowers, and another corner marked into rows, by a regiment of White Birch, bean poles, and pea bushes, with an intersprinkling of corn stalks, some squashes—vines, and a great deal of rubbish, where, as the country people say, the



"Garden Sauce" is grown. Now, as the object of this article is to have a little talk about this very "Garden Sauce," let us see if we need to abandon our much loved vegetables, in improving our homestead, and making its surface a little more pleasing to the eye.

Rather than abandon them, it would be better to lose much that would be pleasing of the purely ornamental, for in the country, people are very dependent upon the vegetables of their own growing, as markets are rare, and but ill supplied. Were there no other argument for their culture but this, it, alone, would be enough, but there is a still stronger one: few are aware how conducive to health the summer vegetables are: all authorities agree in recommending their free use: and the danger of cholera arises, not from the bad effects of good, fresh vegetables, so much as from the stale and wilted denizens of the market. It is always a matter of very great surprise to city residents, to find so little attention paid to the growth of anything but potatoes, corn, and a few beans, in the country. Leaving bricks and dust for green lanes and trees, they revel in the fresh air, and with a keen appetite, eagerly await the promised dinner, imagining all the dainties of the vegetable world they have heard of, strawberries and cream, green peas, sweet corn, &c. When to their surprise they see the kitchen maid returning from the neighbour's with a bought, or borrowed pint of milk, and meet with the excuse from the matron, that "she regrets the lack of asparagus, lettuce, &c., but the butcher didn't bring any, and it's so hard to get vegetables in the country." The difficulty lies in the *dread of trouble, not in the trouble itself*: do not be so afraid, good sir, after you have come home from the day's work, to drop a few peas, or tomatoes or lettuce seeds! and do not let your imagination dwell upon the hot days' weeding by and bye.

It is a great shame, that it should be universally true, that it is no where so difficult to get vegetables as in the country. It will not do for you to say, anytime will answer for that work.—Anytime is no time. Believe me, the ten minutes of aggravation a day your wife will feel when the dinner presents no variety; of disappointment you will experience when you find your wife is not a fairy, and cannot produce baked beans and potato in any other shape than baked beans and potato, and is unable to alter the everlasting veal and bread, into green peas and sweet corn,—is much more, than the mere trouble of weeding, and sowing the seed. But weight enough has not been given to the healthfulness of vegetables: we are too essentially a meat-eating race; we do not know how to make the most of things; and hundreds of poor families might enjoy a luxurious variety, would they but use the bounties of the vegetable world.—The English and European peasantry live entirely on a vegetable diet, and yet are quite as healthy as we are, and hundreds and thousands of our poor people have more sumptuous meat fare than the majority of the inhabitants of the old world. Lay off, then, in your garden, a bit of land; plant a few of the different vegetables, just enough to supply yourself, and do not make that

fatal mistake of getting so much land under culture.

People are inclined to go to work too largely, and plant enough of a few things, to supply several families, and then to allow the quantity to take the place of variety. It is very easy to calculate how much you will want, and when you have decided, do not plant all at once, but have a succession; plant a row of peas and corn to-day, another in a week, and another the third week; then have a few hills of squashes, summer and winter, and remember it is no economy to cover the land with winter squashes to the exclusion of summer vegetables;—it is robbing Peter to pay Paul, and no gain; then a few hills of melons, some distance from the squashes, to prevent impregnation of seed. Have some ten tomato plants, a little patch, ten feet square, of carrots, another of parsnips, a few hills of rhubarb, or pie plant, a small square, say 20x20, of asparagus, and dotted in, a few pepper plants, some cucumbers, and in a corner by themselves, one hundred raspberry vines with two or three strawberry beds, 4x20 feet. On the edge of the walk, set currants and gooseberries, and a little further in, dwarf peas. By a judicious selection of place, you can get two or three crops a year from some of the land; the parsnips will be eaten before time of planting, when their place may be taken by radishes, and they be followed by peas, and they by a few turnips. To the other early peas, the parsnips may follow: on the corn land you can grow squashes, and *vice versa*.

Half an acre arranged in this way, will give all that a family of six persons can possibly need, but be sure to remember at starting, that you want no more land under culture, than you keep free from weeds, and to plant no greater quantity than you can use yourself. Where the most of the surface is under culture, and the ornamental is entirely excluded, there is danger of a too great spirit of utility; therefore do not forget that we must feed the mind and soul as well as the body but pay a due regard to both. It is very desirable, however, to keep each division by itself, and not mix them together heterogeneously. No one wishes to see gilly-flowers and cabbages side by side, because they are of the same family; let the two divisions be just as separate as parlor and kitchen, but do not omit either any more than one of these two rooms from your house. It may seem rather late to make this appeal for the vegetables, but there is yet time for tomatoes, late peas, sweet corn, carrots, parsnips, cabbages, and when you read over this list, recall the savory dishes they may be compounded into and be willing to give your wife the assistance you can in the culinary department. Lest the succession of the vegetables should be forgotten, an enumeration may be of service; first parsnips, then asparagus, rhubarb, radishes, lettuce, dandelions, peas, beans, cucumbers, corn, squashes, tomatoes, carrots, turnips, cabbages and potatoes. For fruits, strawberries, raspberries, currants, cherries, melons, pears, peaches and apples,—all within the reach of every owner of one hundred and fifty feet square of land.

# Reviews, &c.

*The Anglo-American Magazine*—July, 1854; Maclear & Co., Toronto.

The present number of this popular Canadian miscellany commences the fifth volume, so that the work may now be considered as fully established. A progressive improvement has hitherto marked its career from the commencement, and the present number of the new volume is, to say the least, no exception to the general law. It contains a lithographic portrait of our excellent Governor General, Lord Elgin; a striking view of the celebrated Cedar Rapids on the St. Lawrence, and two plates of the fashions for the Month. Altogether the "getting up" of this interesting serial is highly creditable to all parties engaged, and cannot fail to draw attention to the superior style in which such matters are managed in the Messrs. Maclear's establishment.

*The People's Journal*—New York: Alfred E. Beach, Editor and Publisher, 86, Nassau-Street.

This is indeed an extraordinary publication when quality, quantity and price are considered. It is published monthly, for one dollar a year; each number consisting of 32 large and closely printed octavo pages, profusely illustrated. The part for July, now before us, contains no less than forty cuts, illustrating a number of interesting papers on Agriculture, Natural History, Typography, the Mechanical Arts, &c. We can confidently recommend the *People's Journal* as the best and cheapest publication of its class that has come to our knowledge.

*Chambers's Journal of Popular Literature, Science and Art*—Part 6—July, 1854; A. H. Armour & Co., Toronto.

The present part is, like its predecessors, well filled with interesting and instructive articles, several of them by the most accomplished and popular writers of the day. It completes the first volume of the new series, and those of our readers who are not already subscribers could not do better than become such at once. The Journal of the Messrs. Chambers is too well known in every part of the civilized world to need any particular recommendation from us. Messrs. Armour of this city, are agents for this and the other numerous publications of those enterprising publishers; and distant readers can procure the original Edinburgh edition, monthly, of the booksellers in the principal towns of the Province, at the moderate charge of ten shillings per annum.

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Herts, England.

Toronto, August, 1854.

TO

Agricultural Societies, Farmers, and Others!

ON SALE BY PRIVATE TREATY, by the Agricultural Society of the Township of ORILLIA, County Simcoe, that celebrated DEVON BULL

## ROBROY!

Being now six years old, and having received the first prize awarded by the Agricultural Association of Upper Canada, at Niagara, 1850. He has also received the first prizes awarded to Bulls by the Oro, Medonte, and Orillia Agricultural Society. The length of time he has been in possession of the Society renders it necessary to effect a change, which is the only reason for parting with him. Pedigree can be given, and further particulars known, on application to the Secretary,—if by letter, post-paid.

GEORGE TUDHOPE,  
Secretary.

Orilla, July 22, 1854.

8-2m



**SIR CHARLES NAPIER,**

(Imported Short Horn Durham Bull,)

THE PROPERTY OF MR. RALPH WADE, JR.,

NEAR COBOURG, C. W.,

**W**ILL serve Cows this season, 1854; thorough bred Cows at Ten Pounds, others at Two Pounds Ten Shillings each P. P. Calved March, 1853, bred by J. M. Hopper, Esq., Middlesbro'-on-Tees, Yorkshire, England: got by Belleville, (6778), d. Polly, by Belleville (6778), g. d. Madeline, by Newham (4503), g. g. d. Ganymede, by Uptaker (5334), g. g. d. Garland, by Matchem (2281), g. g. g. d. by Fitz Remus (2025), g. g. g. g. d. by Cato (119), g. g. g. g. d. by Whitworth (695), g. g. g. g. g. d. bought of Mr. Mason, of Chilton.

**BELLEVILLE.**

(Vide Coate's Herd Book, Vol. 6, p. 18, No. 6778.)

*The property of Mr. John Mason Hopper, will serve Cows at Newham Grange, near Middlesbro'-on-Tees, at 12 Guineas each Cow.*

In the year 1846, Belleville (sire of Sir Charles Napier) won the first Prize in the first Class, at the meeting of R. A. Society of England, at Newcastle; the first Prize in the first Class, at the meeting of the Yorkshire Agricultural Society held at Wakefield; the first Prize in the first Class, of the Royal Irish Improvement Society, held at Limerick, and the Challenge Cup of 100 Guineas' value, as the best Animal in the Yard, with one Gold and two Silver Medals; also, the first Prize in the first Class, at the meeting of the Highland Society of Scotland, held at Inverness, and the Silver Medal for the Breeder; likewise in 1848, the first Premium at the Durham Agricultural Society's Show, held at Darlington; and in 1850, at the meeting of the Highland and Agricultural Society, held at Glasgow, he won the sweepstakes of 2 guineas each, with 25 added by the country, as the best bull of any age, open to England, Ireland, and Scotland, beating nineteen others.

**CHALLENGE.****\$1,000 to \$4,000 a Side!**

Or in Friendly Competition.

**IMPORTED "YOUNG LION"** Within one Month after his Season is over (due notice being given), is open to

**WALK OR TROT 5 MILES AND UPWARDS.**

Against any Stallion, Gelding or Mare, of his weight or more, in Canada or in the United States, imported or otherwise, and as so few Horses can be found to weigh with him, any Horse weighing within 250 lbs. of his weight will be allowed to compete.

--ALSO--

At the same time, he will be open to Trot his Mile in less than **FOUR MINUTES**, in or out of Harness.

--ALSO--

At the same time, he will be open to draw any weight from **Two Tons** and upwards, from 5 Miles to 100, and return unladen in the shortest space of time, against any Stallion, Gelding or Mare, of any class, size or weight, either in Canada or the United States, imported or otherwise.

--ALSO--

For Superiority of Action against any Horse of his Class wherever he can be found.

One Judge to be chosen from among the veterinaries of New York, one from Montreal and one from Toronto, whose services are to be paid for by the Winner.

The Trials to take place in the vicinity of Toronto; and all travelling expenses to be allowed to the Owner of any Horse that may compete coming from a distance.

**W. B. CREW.**

Toronto, May 27th, 1854.

6-6-m.

**PRIZE SCHOOL BOOKS.**

**T**HE Subscriber obtained Diplomas at the Provincial Exhibitions held at Hamilton and Montreal in 1853, for "the Best Collection of School Books, printed and bound in Canada, for the use of Common and Grammar Schools." Among these books will be found

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Do. do. in French, just published, 2s.

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**HEW RAMSAY,***St. Francis Xavier St.*

Montreal, April 28, 1854.

7-2 m

THE

**CANADIAN AGRICULTURIST,**

**E**DITED by G. BUCKLAND, Secretary of the Board of Agriculture, assisted by Mr. H. Thomson and the Proprietor. It is published on the 1st of each month by the Proprietor, William McDougall at his Office, corner of Yonge and Adelaide Streets.

**TERMS.**

SINGLE COPIES—One Dollar per annum.

CLUBS, or Members of Agricultural Societies ordering 25 copies or upwards—*Half a Dollar each Copy.*

Subscriptions always in advance, and none taken but from the commencement of each year. The vols. for 1849-'50-'51-'52-'53, at 5s. each, bound.

# THE CANADIAN AGRICULTURIST,

AND JOURNAL OF TRANSACTIONS

OF THE

BOARD OF AGRICULTURE, AGRICULTURAL ASSOCIATION, &c.

VOL. VI.

TORONTO, SEPTEMBER, 1854.

No. 9.

## Agriculture, &c.

### ROYAL AGRICULTURAL SOCIETY OF ENGLAND

JULY EXHIBITION AT LINCOLN.

*(Abridged from the Mark Lane Express.)*

The Royal Agricultural Society should feel at home in Lincolnshire. The visit is that of a tutor to a pet pupil, or, more appropriately, of a large landed proprietor to his model farm. It is here he finds the example for the rest of his tenantry to imitate. It is here he triumphantly comes to the proof of all he has been preaching. It is here he shows what practice with science has accomplished, and how judicious outlay has arrived at profitable returns. The Agricultural Society has had to march into many parts of the kingdom, with its object but little appreciated, as its efforts but comparatively little known.—The welcome has generally been hearty enough; but seldom has it been so thoroughly satisfactory, either “to him who gives or him who takes,” as in the good city of Lincoln.

It is not too much to say that the most extraordinary expectations were entertained as to the success of this meeting; and it is not too much to add that they have been amply realized. It is an anniversary that must ever stand out amongst the most conspicuous of those recorded in the proceedings of the Society. In almost every way has the result been gratifying. Whether we take the increasing importance attached to these annual displays, as demonstrated by the attendance, the general excellence of the show, or the characteristic features imparted to it by the locality in which it was held—the conclusion to be arrived at is still the same. It bears, too, the most trying of all scrutinies with an equally handsome issue. It is long since any meeting has added so much to the funds of the Society;

and this question of funds, it must be remembered, is one which for some time past has engaged the serious attention of those on the direction who devote themselves more particularly to the business of finance. The poor company at Lewes, and the gloomy atmosphere of Gloucester, have been well compensated for, by the still succeeding crowds, and settled sunshine of Lincoln.

A little consideration will show, that even previous to this last week's gathering, the national Society had some thanks due to Lincolnshire. Many a hint that became gradually embodied in its prize-list—many a point that the farmers of the whole kingdom were incited to achieve—might be easily traced back to the practice of this now famous county. The very President for this year, and one of the most prominent members of the Council, though coming himself from a far distant quarter, has long since declared himself as the champion of Lincolnshire farming. The tenant who wished to know how he was to do best, was told to imitate what was done here. The landlord whose laudable ambition it was to see his property made the most of, was ordered to learn his duty and take his share in the good work from his brethren in Lincolnshire. Indeed, it might even yet be written that we came more to learn than to teach—prepared rather to see what the district could show us, than what we could show it.

The weather was delightfully fine and the number of visitors unusually large—entrance fees amounting to upwards of three thousand pounds. The dinner was attended by near a thousand persons, the Earl of Chichester presided, in the absence of the President, Mr. Philip Pusey, from indisposition. A deputation of several gentlemen from France, attended the show for the purpose of collecting information with a view of organizing a similar society in their own country.

### CATTLE.

#### SHORT-HORNS.

This is a somewhat singular designation, and a total stranger to the breed is to be found notic-



ing any peculiarity about the horn. From whence this most fashionable and most valuable breed derived its name we know not; but its great improvement, if not creation, dates from the bull "Hubback," on the one side, and the Teeswater, Holderness, Lincoln, and other like coarse breeds on the other. Hubback was calved in 1777, and was bought by Messrs. Collings, out of a bye-lane; from him descended Favourite (the sire of "The Durham Ox"), Comet, and other bulls, &c. It was from this stock that the breed of cattle known as "The Improved Shorthorns" was established. We believe that it now carries the palm." No breed has attained like celebrity, and this is proved by some of the late sales; none so early reach a ripe state of maturity, and but few exhibit better milking qualities. The nobility of their appearance is superior to that of any other breed, and the prices realized by some of the most popular herds and best bloods exceed belief—the celebrated Duchess tribe, for instance; nine animals from this tribe were sold at Tortworth [Earl Ducie's] sale for 4,160 gs. or 462 gs. each. The county of Lincoln has been long celebrated for its breed of shorthorns; we were therefore prepared to witness a splendid collection of animals, and the result has fully answered our anticipations. The show was a first-rate one as a whole, but to take individual specimens of this breed we have occasionally seen them surpassed. The classes of cows and heifers we think were never better filled up, and many first-class animals are amongst them. We make honorable mention of these classes first, because we think they have the first claim. The classes of bulls, good as they are, do not equal the cow and heifer classes. We do most heartily commend them as a whole, but what we looked for was one or two specimens of still greater merit than are to be found; some "Duke of Northumberland," or one equally surpassing his fellows.

**CLASS I.—BULLS** calved previously to the 1st of July, 1852, and not exceeding 4 years.

William Sanday, of Holme Pierrepont, Nottingham, and Henry Smith, of The Grove, Cropwell Butler, near Bingham, "Vatican," roan, 3 years 2 months 2 weeks and 5 days, bred by the late Earl Ducie, of Tortworth Court; sire Usurer, dam Virginia, sire of dam Petrarch. (First prize of £40.) This is a finely formed animal, of great merit; beautiful chine and chest, with level back and good hips, his head full, good and handsome, except a little prominence above the eye, nice neck, ribs not sufficiently springing, leaving the form less cylindrical than we like, beautiful level sides, good loin, hips wide, thighs long and full, twist full, flank and ripping parts not quite full enough in proportion, nor is he quite so noble in appearance as some of our first-class bulls of former years.

Richard Booth, of Warlaby, near Northallerton, "Windsor," white, with red at end of the ears, 2 years and 9 months, bred by exhibitor; sire Crown Prince, dam Plum Blossom, sire of dam Buckingham. (Second prize of £20.) This is a beautiful animal, very cylindrical in form, plenty

of good lean flesh, fine appearance, head and muzzle small, good horns and well set, neck thin and short, chest very deep, with full, well thrown out shoulders, beautiful level wide chine and back, ribs well springing, forming a fine cylindrical shape throughout, hips rather too close, but good rump, thighs and flank very superior, twist good, tail fine and well set, legs rather short and fine; a very good animal.

**CLASS II.—BULLS** calved since the 1st of July, 1852, and more than 1 year old.

William Odling, of Baslingthorpe, near Market Rasen, "Comet," roan, 1 year and 6 months, bred by exhibitor; sire Sir No Name, dam Rosemary, sire of dam Prince. (First Prize of £25.) This is well formed, and of good substance, but stands rather too low; head rather ordinary, horns fine and pointing forward, neck too thin and not quite right adjoining shoulder, back and chine very even, hips good and standing out well, ribs fairly springing, with good chest, and flank rather thin, but good thighs, tail rather high, and tuts bare; beautiful color.

Charles Towneley, of Towneley Park, near Burnley, "Hogarth," red, 1 year and 8 months, bred by exhibitor; sire Harbinger (10,297), dam Rosa, sire of dam Baron of Ravensworth. (Second prize of £15.) This is a beautifully formed good animal, very pleasant head and horns, full neck, full good chine and back, but not quite level, hips rather short and too narrow, twist too light, thighs long, but rather thin, flanks and lower parts all good, tail rather high, tuts broad and short, ribs nicely springing, and deeply, but not quite cylindrically formed; a deep good red color.

**CLASS III.—BULL CALVES** above 6 and under 12 months old.

Charles Towneley, of Towneley Park, near Burnley, "Master Butterfly," rich roan, 11 months, bred by exhibitor; sire Frederick (11489) dam Butterfly, sire of dam Jeweller (10354). (Prize of £10.) This has a good and proportionate frame; fine horn, fine neck, chine rather narrow, even back, hips fair, tuts good, twist good and full, and color good.

**CLASS IV.—COWS IN-MILK OR IN-CALF.**

John Booth, of Killerby, near Catterick, "Venus Victrix," roan, 3 years and ten months, in-milk, bred by exhibitor; sire Vanguard, dam Bloom, sire of dam Buckingham. (Second prize of £10.)—A good, well-formed animal; muzzle too dark, heavy and wide breast, thighs good; her whole frame exceedingly good.

Charles Towneley, of Towneley Park, near Burnley, "Beauty," roan, 6 years and 9 months, in milk and in calf, bred by exhibitor; sire Victor (8739), dam Mantle, sire of dam Marcus (2262). (First prize of £20.) A very fine animal, with hips astonishingly large and fat; the cow herself very fat, and almost a perfect cylinder in form, except her wonderful tuts and hips; neck rather light, but breast exceedingly good; her great top causes her arms, legs, and flank to look thin; color very good.

This is a very superior class, and fully keeps up the reputation of the Shorthorn cow.

**CLASS V.—HEIFERS IN MILK OR IN CALF,** not exceeding 3 years old

Charles Towneley, of Towneley Park, near Burnley, "Vestris," light roan, 2 years and 9 months, in calf, bred by exhibitor; sire Hudibras (10339), dam Venetia, sire of dam Tom of Lincoln (8714); and 86, "Butterfly 2nd," red and white, 2 years and 5 months, in calf, bred by exhibitor; sire Garrick (11507), dam Butterfly, sire of dam Jeweller (10354).—Two well proportioned fine animals, and large. No. 85 takes the second prize of £10, and is a beautiful animal, having a nearly perfect form and symmetry; broad and full in every part, with fine beautiful head and horns.

James Douglas, of Athelstaneford Farm, near Drem, East Lothian, Haddington, "Rose of Summer," red, 2 years and 2 months, in calf, bred by exhibitor; sire Velvet Jacket (10998), dam Rose of Autumn, sire of dam Sir Henry (10824). (First prize of £15.)—Very good and well made, but rather small; of exceeding fine quality, short and thick; neck she has none, her ears and shoulder nearly meeting; frame very deep, chine surprisingly good, hips not wide, tuts narrow; but her general form is wonderfully compact and full.

**CLASS VI.—YEARLING HEIFERS.**

Charles Towneley, of Towneley Park, near Burnley, "Blanche 6th," red and white, 1 year and 10 months, bred by exhibitor: sire Frederick (11489), dam Blanche 5th, sire of dam Duke of Northumberland (1940); and "Roan Duchess 2nd," roan, 1 year and 9 months, bred by exhibitor; sire Frederick (11489), dam Roan Duchess, sire of dam Whittington (12299).—Two beautifully-formed heifers, particularly No. 94, which takes the 1st prize of 10*l*. She has a beautiful head, and fine horns, a prominent good shoulder, fine chine, wide hips, and ribs well out, flank and under parts all right, tuts great and good; very fine in offal. She is of fine symmetry and quality. No. 95 is a beautiful heifer.

George Sainsbury, of The Priory, Corsham, near Chippenham, "Countess 4th of Gloucester," red and white, 1 year and 7½ months, bred by exhibitor; sire the Duke of Gloucester, dam Countess 1st, sire of dam Antonio—takes the 2nd prize of 5*l*. She is rather too narrow in chine, back, and hips, but, as a whole, a good heifer, long in frame, and high standing.

**HEREFORDS.**

We now come to the classes of Herefords. The Hereford cattle are now universally known by their peculiar colour and form. The colour is usually red, either light or dark, with white face, and a white streak along the back; generally some marks of white about the neck and along under the body: there is a grey or roan variety with similar white marks. Their form is singularly compact, full, and symmetrical. The origin of this breed of "white faces" is yet a mystery, but it is affirmed that they were introduced from Flanders near 200 years ago, and fac-

similes of them are to be found in old Flemish paintings; be that as it may, it is certain that they have undergone immense improvement within the last fifty years. Many attain a large size, and the breed stands pre-eminent for that rotundity of shape, that fulness of chest, and breadth of chine so essential to a good constitution; their general contour and vivacity of look are admirable. The cow is a good milker, giving large quantities of milk upon moderate provender. This department of the show has been a very circumscribed one, the number of animals altogether shown in the various classes not exceeding nineteen, and few of them of first-rate character.

**CLASS I.—BULLS** calved previously to the 1st of July, 1852, and not exceeding 4 years old.

Edward Price, of Court House, Leominster "Magnet," red and white, 2 years and 10 months, bred by Thomas Yeld, of Bodenham, near Leominster; sire The Knight, dam Spot, sire of dam Big Ben (first prize of 40*l*).—He is of great substance in little room, stands wide, good form. This is a good and profitable animal, without many marks of great superiority.

John Carwardine, of Stockton Bury, near Leominster, "Malcolm," dark red, 3 years and 6 months, bred by John Turner, of Court of Noah, near Pembridge; sire The Knight, dam Nutty (second prize of 20*l*).—A fine animal of great substance, head fair, neck large, chine very deep, great length, good hips, rump not good, thighs large.

**CLASS II.—BULLS** calved since the 1st of July, 1852, and more than 1 year old.

James Rea, of Monnaughty, near Knighton, "Guardian," red with white face, 1 year 7 months and 1 week, bred by exhibitor; sire Attraction (892), dam Spot, sire of dam Cholstrey (217), (first prize of 25*l*).—This bids fair to make a good heavy animal, having plenty of good lean flesh.

William Styles Powell, of Castle Street, Hereford, "Brecon," red brown with white face, 1 year 7 months and 23 days, bred by Walter Maybery, of Brecon; sire Young Dewall, sire of dam Henry the Second (second prize of 15*l*).—This has a good fore-quarter, and fair cylindrical form; hind-quarter rather defective.

**CLASS III.—BULL CALVES,** above 6 and under 12 months old.

In this class only one animal was shown, this was the property of Mr. Edward Price, of Court House, near Leominster, "Magnet the Second," red and white, 8 months, bred by exhibitor; sire Magnet, dam Windsor, sire of dam Pembridge (the prize of 10*l*).—A very useful, well-formed calf; and the prize was properly awarded.

**CLASS IV.—COW IN-MILK OR IN-CALF**

Philip Turner, of The Leen, Pembridge, near Leominster, "Nell Gwynne," brown with white face, 3 years and 6 months, in milk and in calf, bred by exhibitor; sire The Knight, dam Belle, sire of dam Sir Walter (first prize of 20*l*).

Lord Berwich, of Cronkhill, near Shrewsbury, "Miss Lewes," red spots on white face, 3 years



6 months and 2 days, in milk and in calf, bred, by his Lordship; sire Wonder, dam Duchess of Norfolk, sire of dam Tom Thumb (second prize of 10*l.*).—She is well filled out in every part; large and heavy, with beautiful countenance.

In this class only two animals competed, which, however, were good representatives of the breed.

**CLASS V.—HEIFERS IN-MILK OR IN-CALF, not exceeding 3 years old.**

William Perry, of Cholstrey, near Leominster, "Fancy," red and white, 2 years and 8 months, in calf, bred by exhibitor; sire Noble Boy, dam Gloucester, sire of dam Marden (first prize of 15*l.*).—A very fine broad-framed heifer, with excellent points and plenty of lean flesh.

The Earl of Radnor, of Coleshill House, near Highworth, "Stately," red and white, 2 years and 3 months, in calf, bred by his Lordship; sire Venison, dam Young Sovereign (113), sire of dam Jeffries (second prize of 10*l.*).—A large useful heifer.

In this class also the competition was confined to two animals.

**CLASS VI.—YEARLING HEIFERS.**

John Walker, of Westfield House, Holmer, near Hereford, "Lady," brown with white face, 1 year 8 months and ten days, bred by exhibitor; sire Widemarsh, dam Windsor, sire of dam Governor (first prize of £10).—This heifer denotes fair substance, length, and good frame.

Philip Turner, of The Leen, Pembridge, near Leominster, "Gazelle," brown with white face, 1 year and 7 months, bred by exhibitor; sire Andrew the Second, dam Vesta, sire of dam Sir Walter (second prize of £5).—A very pretty little heifer.

This was a rather better class-competition, though only five entries.

#### DEVONS.

The variety usually shown in these classes is the North Devon cattle. The South Devon is far inferior to the North Devon. He is generally of slender make, and altogether is considered a mis-shapen animal, and the quality of his flesh coarse and unprofitable. The North Devon, on the contrary, is probably the handsomest and hardiest of the English breeds, as also one of the oldest native herds. The flesh is of excellent quality, and it is produced in larger quantity on the most valuable joints than other breeds.—They fatten rapidly, and their beautiful appearance and symmetrical proportions are nearly perfect. They do not come to so large weights as the Short-horns or Herefords; but their adaptation for ploughing and to thrive on inferior pasturage is so remarkable, the peculiarity of their character is so distinct, and the extent to which they are bred so great, as to fully entitle them to a distinct class in the Society's exhibitions.—The cows are proverbially good milkers, and Devonshire cream and Devonshire butter are of all kinds most popular. The show this year is not equal to some of former years, but decidedly good, comprising thirty-eight animals in the different classes, and those of a character fully

calculated to keep up the reputation of the breed, and the celebrity of the breeders. The prizes have been pretty equally distributed between those gentlemen whose names have long appeared before the public as breeders of Devons—Somersetshire once more coming into formidable competition.

**CLASS I.—BULLS** calved previously to the 1st of July, 1852, and not exceeding 4 years old.

Samuel Farthing, of Stowey Court, near Bridgewater, "Baronet," red, 3 years 2½ months, bred by exhibitor; sire Baronet, dam Dairymaid.—(First prize of £40).—This a very heavily loaded animal, possessing great substance, of good quality, in little compass, his shoulders are rather high, his back not even, good rump, capital ribs and thighs.

George Turner, of Barton, near Exeter, "Abdel-Kadir," red, 2 years and 4 months, bred by Richard Moggeridge, of Molland, near South Molton; sire Earl of Exeter, dam Prettymaid, sire of dam Baronet. (Second prize of £20).—This is a very prettily formed animal, with deep chest, and great beauty, and exceedingly good quality, but rather small; his offal not much heavier than some of the large pigs.

**CLASS II.—BULLS** calved since the 1st of July, 1852, and more than 1 year old.

Robert Wright, of Moor Farm, near Taunton, "Protector," red, 1 year 11 months and 20 days, bred by exhibitor; sire Young Miracle, dam Fancy, sire of dam Fat Ass. (First prize of £25).—This is a bull of very even proportions, deep chest, ribs not sufficiently springing, good level back, but not wide, very handsome, and of fine quality.

James Quartley, of Molland House, near South Molton, "Napoleon," red, 1 year and 6 months, bred by exhibitor; sire Duke of Devonshire, dam Rosebud, sire of dam Baronet. (Second prize of £15).—This is a finely proportioned and compact animal, of great merit; head not very pleasant looking.

**CLASS III.—BULL CALVES** above 6 and under 12 months old.

In this class the competition was limited to two animals.

George Turner, of Barton, near Exeter, "The Czar," red, 7 months and one week, bred by exhibitor; sire Earl of Exeter, dam Sontag, sire of dam Baronet. [Prize of £10].

**CLASS IV.—COWS IN-MILK OR IN-CALF.**

There was a good competition in this class—the animals equal to former years.

Samuel Farthing, of Stowey Court, near Bridgewater, "Lovely," red, 4 years 2½ months, in-milk and in-calf, bred by exhibitor; sire Wonder, dam Lofty. (First prize of £20).—This is a cow of very great beauty, even, deep, and full throughout, pleasant looks, capital shoulders, a perfect cylindrical frame, of excellent quality. The Earl of Leicester, of Holkham, near Wells-next-the-Sea, Norfolk, "Beauty," red, about 8 years, in-calf, bred by R. Merson, of Brinsworthy, near North Molton. (2nd prize of £10).—A cow answering in every respect to her given name, Beauty.

**CLASS V.—HEIFERS IN-MILK OR IN-CALF, not exceeding 3 years old.**

Only three competitors in this class, the animals very creditable.

George Turner, of Barton, near Exeter, "Dahlia," red, 2 years and 5 months, in-calf, bred by exhibiter; sire Earl of Exeter, dam Julyflower. (First prize of £15).—This is a fine specimen of the breed as a young heifer, delicate in make, of superior quality, very proportionate frame, of great beauty.

James Quartley, of Molland House, near South Molton, "Graceful," red, 2 years and 6 months, in-calf, bred by exhibiter; sire Duke of Devonshire, dam Curly (93), sire of dam Quartley's Prince of Wales. (Second prize of £10). This really accords with her name, "Graceful," capital tuts and twist, very pretty.

**CLASS VI.—YEARLING HEIFERS.**

This was an interesting class, and several good animals were exhibited.

George Turner, of Barton, near Exeter, "Garcia," red, 1 year and seven months, bred by John Halse, of Molland, near South Molton; sire Earl of Exeter. (First prize of £10).—This is a very pretty specimen of the breed, and well worthy the distinction, exceedingly well made, being a full and beautiful cylinder.

Thomas Webber, of Halberton Court, near Tiverton, "Jenny Lind," red, 1 year 7 months and 2 weeks, bred by exhibiter; sire Sir Robert, dam Rosebud. (Second prize of £5).—Is a beautiful little heifer, nicely proportioned, with flanks somewhat slight.

The classes 4 and 6 were generally commended.

**OTHER BREEDS.**

This is a class combining all breeds, except these just named. We have before expressed our doubts respecting this class. We doubt the feasibility of bringing all "other breeds" into one general competition: in order to improve the whole, every variety of Irish, Scotch, Welsh and English, not included in the three favored classes, are here sought to be shown in rivalry; the result is, that very few ever come at all.—These classes might embrace, or be composed of upwards of 100 varieties—breeds and subvarieties of breeds. Every district of the three kingdoms lays claim to peculiar distinctions in breed, and each has as strong advocates in its favor. This cannot be right: Judges cannot adjudicate properly amidst so many kinds, and designed for so many purposes. We should prefer offering prizes for the best animals suited to certain districts or particular purposes.—We might thus have put before us for decision the best breed for mountain pastures, hilly districts, moorlands and other inferior herbage; or, again, the best milkers or most prolific breeders, &c., &c. We might thus from time to time gain knowledge; but to have such a mingled class, in order that the judges may tell us which is the best animal amongst them, can answer no very useful end; the show of this year fully bears out our views, for while we have some splendid specimens of Longhorns, we have stand-

ing beside them, as if intended to excite the ridicule of a public not always considerate enough to look to the design for which they are bred.—We want a designation analogous to the above, in order to promote the most good. We do not complain of individuals sending inferior-looking animals for competition in this class: we highly approve it; many are very valuable for certain purposes which are not surpassingly good in our eyes as animals; and if such were not shown, the public would remain uninformed respecting them. All we ask for is, a more extended and better classification, which we trust the liberality of the public will enable the Council to adopt. The show in this class was a great improvement upon some past years. Although in Class I. for Bulls calved previously to the 1st of July, 1852, and not exceeding four years old, there was no entry, and consequently no competition, the cow class was very good.

**CLASS II.—BULLS calved since the 1st of July, 1852, and more than 1 year old.**

This was but a moderate class.

Samuel Burberry, of Wroxhall, near Warwick, long-horned breed, "Blind," 1 year and 4 months, bred by exhibiter; sire Chasleton, dam Primrose, sire of dam Blucher. (Prize of £10.) A fair useful bull.

**CLASS III.—COWS IN-MILK OR IN-CALF.**

This was a good class, and the long-horned cows very good.

Captain Inge, of Thorpe Constantine, near Tamworth, pure long-horned breed, "Favourite J 2," red and white, 9 years and 3 months and 22 days, in-milk and in-calf, bred by exhibiter; sire White Thighs No. 25, dam Fillpail J 1.—(Prize of £10).—A very fine specimen of the long-horned breed; very good, and cylindrical proportioned.

Samuel Burberry, of Wroxhall, near Warwick, long-horned breed, "Violet," brindle and white, 6 years and 4 months, in-calf, bred by exhibiter; sire Blucher, dam Daisy.—(Second prize £25).—This is a very good animal; more compact than the former, with exceedingly good frame and fine condition.

**CLASS IV.—No competition.**

**CLASS V.—YEARLING HEIFERS.**

Captain Inge, of Thorpe Constantine, near Tamworth, pure long-horned breed, "Buffalo E 6," red and white, 1 year 5 months and 2 days, bred by exhibiter; sire Rollright X 50, dam Bashful E 2, sire of dam White Thighs, No. 25, (Prize of £5.)

This class was confined to two animals.

**HORSES.**

We now come to the class of horses, which is a great improvement upon some former years. All kinds are now included in one general term, "for agricultural purposes, in which even the roadster stallion very fairly takes his place. The large "agricultural" horse is the London dray-horse; he is good for both purposes, so that the Society have no improper limit; he may, however, be rather too heavy for ordinary farm uses.



We again demur as to the expediency of including all breeds of horses indiscriminately in this class—farm-horses of every breed; the Lincoln and Clydesdale dray-horses against the Suffolk punches; and these in competition with the almost innumerable varieties of farm-horses throughout the country. These must necessarily be adjudged in a great degree in accordance with the prevailing taste of each individual judge (and in "horse-flesh" who has not his peculiar taste?) We do not impugn judges: they may act with the strictest impartiality, notwithstanding. Here all are to be judged by one standard—"for agricultural purposes"; it must be much a matter of taste. We should prefer some division of breeds, as in the cattle and sheep classes. The Suffolk Punch is probably unequalled as a farm-horse; the Clydesdale and Lincoln dray-horses are more valuable on sale; these might be kept quite distinct in class, and so with any other kind that denote such manifest distinction in breeding; if not, as in pigs, our judges must define them.—The show has fully equalled our expectations, and many fine horses have been exhibited. The agricultural stallion classes are well sustained, though not so numerous as we expected to see them. The Society should have bethought them of the character of the country, and provided for it. A class should certainly have been organized for hunters, and a prize offered. Happily, the Mayor of Lincoln and the gentlemen of the local committee supplied this lack from their own means. The result has proved their wisdom, and is very worthy of the occasion. The yearling show surpassed, in some instances, anything we before remember. The mares and foals were well worthy of notice; but without giving further time to a preliminary notice, we will pass forward, and devote a cursory remark to such animals as commend themselves to our judgment.

In Class 1, devoted to stallions for agricultural purposes, foaled previously to the first January, 1852, we find a very noticeable improvement.—Those animals that have received prizes quite deserve them, and those that are commended sufficiently merit commendation; while we fancy that, had the judges possessed more tickets for distinction, they would have put them more frequently than they have done.

Mr. James Stockdale and Messrs. Edward and Matthew Reed bore away the prize in this class. The property of the latter gentleman was a fine old bay farmer's horse, more commendable in many points than Mr. Stockdale's.

In passing to Class 2, wherein are the two-year-old stallions for agricultural purposes, we notice that Rutlandshire and Suffolk take the prizes. Mr. Bran is the owner of the first prize horse, and Mr. Wilson of the other.

The most remarkable animal, in our opinion, in the yard, or at any rate amongst the horses, may be seen in the 3rd class. We need not say that we allude to Mr. Robert Howard's prize yearling. Every one mentions it with a glow of enthusiasm. It stands out alone in the class, and the other competitors suffer by the comparison, although there are some fine colts too. And Lincolnshire bears the belt. Never did we see

a yearling so furnished: his points excel those of some four-year-olds. The first prize could not have been more properly awarded.

With roadster stallions we were much pleased. The road horse is more difficult to meet with in perfection than either the hunter or courser. He must be a horse of all work; and so rarely is he to be met with, and so much is the demand increased for him, that we welcome any stallion likely to supply a want so universally felt and expressed. Mr. Innocent stands foremost in this class with his "Calton," a six-years-old, dark bay stallion. The judges have judged wisely, we think. "Sir Charles," the property of Mr. Taylor, is an exceedingly fine animal. His formation denotes strong constitution and good running properties. He seems peculiarly adapted for his work.

Amongst the fillies, Suffolk bears off the palm. The first prize is awarded to Mr. Barthropp, and the second to Mr. Bayles, for a Lincolnshire bred filly.

And now we pass to a class of especial importance, held as the present meeting is, in the midst of one great hunting county, and upon the borders of another. Mr. Tweed, the Mayor of Lincoln, and the members of the local committee, have come forward with prizes of their own, and their call has been promptly responded to. It was very desirable to have a display of hunters, and most praiseworthy was it on the part of these gentlemen to have foreseen this necessity, and arranged for it. The contest seems to us to be a very hard-run one between Mr. Denison's "Louthborough" and Mr. Watson's "Drayton."—The former is certainly a splendid type of a horse, but seems to us somewhat more adapted to get carriage-horses than hunters. From age and work he is shaky on his forelegs. He bears away the prize of £40.

## SHEEP.

The show in all classes is very large, particularly of Leicesters and long wools; while the number of improved Lincolns far exceeds that of any previous instance, when a local class has been provided by the society.

## LEICESTERS.

CLASS I.—SHEARLING RAMS: In spite of close competition, one exhibitor was here able to carry off both prizes. The prize shearlings were bred by Mr. T. E. Pawlett, of Beeston, Beds, and are remarkable for their long and level backs, broad springing chins, good rumps and thighs, and deep plates. The rams of Mr. J. Barton, of Barton-le-street, Yorkshire, are deservedly famed; but in the present instance, we think, that although possessing good fore-quarters, and being well fleshed, they have not quite sufficient depth (two of these are commended).

CLASS II.—RAMS OF ANY OTHER AGE: Mr. J. Barton takes the first prize, for a very handsome sheep, with good chest; and Mr. Abraham, of Barnetby-le-Wold, Lincolnshire, takes the 2nd, for a sheep with wide and straight back, heavy neck, broad chine, and good wool.

**CLASS III.—PENS OF FIVE SHEARLING EWES:** The first prize is awarded to Mr. G. Walmesley, of Rudstone, Yorkshire, for a lot with uncommonly good flesh, compact forms, and very fine bone. The second prize to Mr. Abraham, for a good pen of well-made ewes, though scarcely deep enough through the chest.

**SHORT WOOLS.**

In this class there is very considerable merit, notwithstanding the absence of Mr. Jonas Webb's splendid animals from the show; but we must condemn the practice of some exhibitors, in trimming their sheep to such an extent, as often to hide very serious defects in form, particularly high loins.

**CLASS I.—SHEARLING RAMS:** The prize Ram of Mr. H. Lugar, of Hengrave, Suffolk, is a finely formed animal, neck good, back level, wool fine. The second prize Ram, of the Duke of Richmond's, is also of great merit, having a level broad back, and full shoulders and chine.

**CLASS II.—RAMS OF ANY OTHER AGE.**

Mr. Sainsbury takes the first prize, for a 29 months' old ram, of great length and yet well formed, and with good back. The second goes to Mr. Rigden, for a 28 months' old ram, with level back, good rump, good chine, heavy thighs, but perhaps a little failing in the chest. Mr. Lugar's highly commended ram has a level back, great girth, but rather narrow twist. Mr. Rigden receives another commendation in this class.

**CLASS III.—PENS OF FIVE SHEARLING EWES.**

Mr. Overman's prize ewes are remarkable fine and well-made; and the Duke of Richmond's second prize ewes are certainly beautiful animals, though somewhat small, and with less wool.

**LONG WOOLS.**

As we might expect, in Lincolnshire, the show of long wools is unprecedented as regards the number of specimens; and we find from the catalogue that one-fifth of the exhibitors in this class are men of this county, notwithstanding that a special class has been prepared for them.

**CLASS I.—SHEARLING RAMS.**

Mr. G. Fletcher, of Shipton, near Andoversford, takes the first prize. His ram is of amazing length and size, finely-proportioned and grand-looking, though with a head somewhat too short for some tastes. Mr. G. Hower, of Laygore, near Northleach, shows his very superior breed of animals, celebrated not only for their great size and spacious form, but equally so for their very firm mutton and pleasing countenances. Number 462 has the second prize.

**CLASS II.—RAMS OF ANY OTHER AGE.**

The first prize ram of Mr. W. Lane, 23 months old, is an animal possessing many good points, combined with unusual size; and the second prize ram, 40 months old, belonging to the same breeder, is quite as extraordinary.

**CLASS III.—PENS OF FIVE SHEARLING EWES.**

Mr. W. Garne's beautiful ewes take the first prize; Mr. Lane's take the second; and we must say that these are really surprising animals,

their size being that of some rams, and their breadth of chine and loin, and fore-quarter and rumps, is as great as their heads and bone are fine.

**IMPROVED LINCOLNS.**

This class has been appointed, according to the custom of the Society, to test or develop the breeding capabilities of the district in which the meeting is held; and we may say, that on no former occasion has the local class of sheep been so numerous filled with good animals, or so well characterized by good mutton and fine qualities. The Improved Lincoln occupies a very extensive district of the country, and, from the fact of producing a longer and heavier fleece than any other sheep, forms a very important breed. We cannot say that all the sheep exhibited in this class were of peculiar merit; indeed, from what we know of the various Lincoln flocks, we anticipated a still better show: but we can safely affirm that many of the animals possess great beauty, extraordinary substance and symmetry, good looks, fine quality of flesh, and a long thick-set staple of very good wool. Without the amazing proportions of the Cotswold or New Oxfordshire breeds, they have hitherto failed to succeed in competition with them in the same class; but as animals profitable to both breeder and grazier in meat and wool, they are abundantly able to enter the field against the broader framed but lighter skinned Cotswolds.

**CLASS I.—SHEARLING RAMS.**

The first prize is awarded to Mr. John Clarke, of Long Sutton, Lincolnshire, for a good well-made sheep, with good mutton and plenty of wool. The second prize to Mr. Thomas Greetham, of Wragly, Lincolnshire, for a useful farmers' sheep, fairly proportioned, and of considerable merit.

**CLASS II.—RAMS OF ANY OTHER AGE.**

Both first and second prizes are taken by Mr. John Clarke. Both animals of great size, breadth, and depth; good rumps, loins, and legs; firm, beautiful meat, and very heavy wool. The first prize sheep is exceeded in girth, we believe, by only one sheep in the yard—viz., one of Mr. Lane's Cotswolds, and he clipped in three years no less than 51½ lbs. of wool.

**CLASS III.—PENS OF FIVE SHEARLING EWES.**

Mr. John Kirkham obtains the prize for a lot of very good ewes, having plenty of wool.

**THE EXHIBITION OF PIGS.**

The only classification adopted by the society is that of "Large Breed" and "Small Breed"; and considerable difficulty always arises in distinguishing between the two, so as to pronounce with certainty in which class some of the animals ought to be shown. For it is less the actual dimensions than the peculiarities of form that mark these groups of "large" and "small" breeds, the latter being found, in some instances, to exceed some of the former in size and weight. And although the judges are always directed to withhold prizes from any animal, however meri-



torious, if entered (according to their judgment) in a wrong class, it frequently happens that a "small breed" pig possesses such amazing frame and flesh as to exclude the really small from fair comparison. Perhaps a better way of ensuring equality of competition would be to follow an entirely different principle of classification: for instance, take the purposes for which the animals are bred and fed, and give two or more sets of prizes for the individual specimens best qualified for these purposes respectively.—Swine are employed for producing two varieties of valuable meat, pork and bacon: one set of prizes might be offered, therefore, for boars and sows best adapted for breeding fine porkers, and another set for larger bacon hogs; apportioned, of course, between boars, sows, and sow pigs, as at present.

And now, with respect to the show at Lincoln: we have certainly seen better—taken as a whole—but many of the animals were of a very superior order, particularly in the small breed class.

**CLASS I.—BOARS OF A LARGE BREED.**—First prize to Henry Blandford, of Sandbridge, near Chippenham, Wilts, for "Jack," 2 years 3 months and 2 weeks old, a pure Berkshire, black, with white face and feet; dam Star, sire of dam Pooock. This is a very large hog, but with rough hair, and a rather coarse quality of flesh. The second prize to Matthew Harvey and Joseph Branstion, of Langford, near Newark, for a white boar, 2 years 11 months and 2 weeks old, of a very great size, good quality, and little oil; somewhat of small breed character.

**CLASS II.—BOARS OF A SMALL BREED.**—First prize to Mr. William Nothey, of Lake Linton, near Launceston, for a 1 year and 3 months old black boar of the improved Leicester breed, having a very thick form and substance, and beautiful quality, though rather too short at the tail. The second prize to Mr. Solomon Ashton, of Peter Street, Manchester, for "Yorks," 1 year and 2 months old, of pure small breed, white with blue spot; a remarkably well bred and valuable hog.

**CLASS III.—BREEDING SOWS OF A LARGE BREED.**—We have seldom seen so large a sow as the first prize one, shown by Edward Robinson, of Green Bank, near Lymm, Cheshire. "Amazon" is 2 years and 2 months old, white, with a few blue spots, immensely long, and having very deep sides. The Rev. Edward Elmhurst, of Shawell Rectory, near Lutterworth, Leicestershire, showed a remarkably fine sow (highly commended).

**CLASS IV.—BREEDING SOWS OF A SMALL BREED.**—In this Class, which the Judges have honoured with a "general commendation," Mr. Mangles takes the prize for the "Queen of Diamonds," 2 years and 4 months old, Yorkshire breed, white; sire "Guy Fawkes," dam "Lucy," of beautifully fine quality. Mr. Nothey showed some capital sows in this class; so did Mr. Thomas Horstall, of Burley Hall, near Otley, Yorkshire.

**CLASS V.—THREE BREEDING SOW PIGS, OF A LARGE BREED.**—Mr. Saddler takes the prize for a pen of three sow pigs, 7 months and 1 day old, pure Berkshire breed, dark spotted; sire "Wellington," dam "Duchess of Gloucester," sire of dam "Barrington." Mr. John Harrison, jun., of Heaton Norris, near Stockport, showed a pen of almost equally meritorious animals; very useful, and uncommonly good in character.

**CLASS VI.—THREE BREEDING SOW PIGS, OF A SMALL BREED.**—The prize was carried off by the Earl of Radnor, for three 5 months and 2 weeks old white pigs of his Lordship's celebrated Coleshill breed; sire "Farrington," dam "Old Bess."

## POULTRY.

We are sorry to notice this year so comparatively poor a show. Lincolnshire seems not to have surmounted the old prejudice that is showed when it underrated Mr. Handley's exertions. Lincolnshire is yet decidedly behind in attention to poultry; a department of farming in this respect from which, if properly conducted, a good profit may be derived. We should be glad to see a county so celebrated in other respects, take the lead in this also; and we advise that the old motto, "What is worth doing at all, is worth doing well," be constantly kept in mind.

The exhibition in question is, in our opinion, not nearly so meritorious as it might have been. True, the time of year is not very suitable to the show of birds in full feather; after having performed the duties of the spring, they are necessarily out of condition. We venture to ask, then, whether it would not be well to give prizes for chickens—encouraging the production of early maturity? Prizes for adult birds might be left for Birmingham to award at Christmas.

The benefits of this annual poultry show are two-fold: it affords to amateurs an arena wherein to enter into friendly competition; and to the landowner or occupier it affords an opportunity to judge of the comparative excellence of breeds. The eye will not alone decide which is the sort adapted especially to any locality; we must consult experience to come at the knowledge. We do not intend to diverge into any remarks in this direction however; and we only say, by way of introduction to some notice of the fowls exhibited, that there may be three classes of profit—breeding for fancy, breeding for eggs, and breeding for the table. The first change with fashion; the second is certain profit; while the third is, although the most neglected, the most remunerative of the three. Of the first we shall say nothing. The Spanish, Hamburg, and Polish fowls are respectively good layers, bad sitters, and consequently fitted for those who require large supplies of eggs. The Cochin China, Malay, Dorking, and Game fowls are good layers, good sitters, and good nurses. But while the Dorking and its kindred varieties are excellent for the table, the Malays and Cochin Chinas can seldom be served up except as roasted, because of bad colour. Mr. Soyer says that, as a rule to be observed in the kitchen, white-legged fowls should be boiled, and black-legged poultry are fit only for the spit.

## IMPLEMENTS.

This department of the show was, as on former occasions, very extensive. Most of the articles were most substantially made, and evinced very great skill both in design and workmanship.—Howard & Ransome carried off the principal prizes for ploughs. Bentall was the most successful among the cultivators and grubbers.—Scragg's machine for making draining tiles and pipes, were decided the best. A trial of Reaping Machines took place on rye; several machines were put into competition. The question of merit lay ultimately between Crosskill's Bell with McCormick's Cutter, and Dray's Hussey, and the prize was awarded to the latter. "It is singular (remarks the *Agricultural Gazette*), how the English and Scotch judges vary in their decisions on this subject. In its own country, Bell has uniformly won the palm,—and as the trials there have generally been during a fitter state of the grain for its operation, we should be inclined to give greater weight to the Scotch decisions.—Dray has this year added a tilting board, which greatly facilitates the delivery of the corn."

### COMPARATIVE ESTIMATE OF JETHRO TULL'S PRACTICE IN GROWING WHEAT.

We have been favored by J. B. Marks, Esq., of Kingston, with a copy of the Eleventh Edition of the Rev. Mr. Smith's pamphlet, entitled *Word in Season; or How to Grow Wheat with Profit*; addressed to the British Farmer. Mr. Smith's operations are carried on upon a limited scale at Lois Weedon, Northamptonshire, and here attracted general attention both among scientific and practical farmers. We propose extracting such portions of his work as will prove suggestive and interesting to Canadian readers:

Attention has been roused at last to the merits of that extraordinary man, the undoubted pioneer of the onward march of modern agriculture. I believe, however, that little is still known by farmers generally of the actual details of the process by which he carried his theory out. A few introductory words, therefore, on this point, and a comparative estimate of his practice, may not come amiss at a time when a great degree of interest on the subject has been awakened among thinking men.

The principle of Tull, in his tillage for wheat, was to pulverize the soil effectually to the bottom of the staple, in order that every particle of the mould might be impregnated with the fertilizing substances of the atmosphere, whatever they were; and that the roots of the plant, at the same time, might be enabled with ease to permeate the loosened earth and so take up the food thus placed within their reach.

To attain his object he divided his field by broad and deep furrows,—as deep, that is, as the staple would permit, and no deeper,—into lands about six feet wide. In the centre of each land he drilled his seed in two rows about ten inches apart, thus leaving an interval of about five feet between each double row. Then, when the plant was up, came a very nice and difficult operation. After closing up the furrow, he ploughed the whole interval, with the exception of six or eight inches, for a winter fallow, taking the last slice within three or four inches of the wheat, and leaving that standing on a ridge about eighteen inches wide, with a deep furrow on each side. Thus it remained during winter. At spring another equally nice and difficult operation succeeded. He cast back the soil, thus fertilized by exposure, against the tender wheat, and restored the broad furrow in the centre of the interval. Then, during summer, as often as the nature and state of the soil required it, he horse-hoed, or rather ploughed it away from the wheat and then back to it again, retiring farther and farther from the spreading roots as the season advanced, and operating for the last time after the wheat had just gone out of flower.

The process succeeded to admiration. The well-stirred soil had become impregnated with the elements of fertility. The roots had been enabled to take up their nourishment. The straw, exposed to the sun and air, hardened and stood well up, except in very peculiar seasons. The ears became unusually bulky, the grain large. And Tull calculated that thus, without manure, on the same acre of land, he gained year after year, for several years, a profit much larger than that of farmers in the common mode of farming.

But, if it indeed was so,—if the profits of the system were so surpassing, it has been very naturally asked, how came it to pass that it dropped, and, with few and scattered exceptions, died away?

The question, as I think, admits of easy solution. The principles of Tull were sound and original, and, as applied to root-crops, have gained their author imperishable fame as a farmer. But with reference to corn, his theory, as carried out by himself, could not stand.

For, it is quite clear, in the first place, that if any farming scheme proposed for adoption be so beset with difficulties in the execution as to be beyond the capacity or the power of common husbandmen, it must come to nothing. It can make no progress as a national concern; and, however promising it may be, it will be looked at only at a distance as a pleasing delusion.

Now, that the full effect of Tull's mode of tillage might be felt by the roots of the growing plant,—in order that they might receive, without any obstruction, the benefits of the impregnated and pulverized mould thrown back to them for their nourishment at spring, it was necessary, at the first ploughing before winter, to guide the plough with such unerring nicety, that a slice should be cut from the sides of the



wheat three or four inches from the tender plant. That was the bond. Cut more or less, in the estimation of a single inch,—cut closer or further off, and the forfeiture and penalty is this: in the one case the object is defeated; in the other, the plant is rooted up, and dies.

Again, it was required at an early spring, when the plant was yet weak, that this slice should be thrown back against the rows: plough with a heavy hand, clumsily, and the wheat is buried. If Tull's ploughman succeeded in avoiding the evil and attaining the good, I question whether, out of the thousands and ten thousands of hard-handed laborers within the realm, there could be found five hundred as good as he.

Here, then, was a difficulty sufficient in itself to be fatal to the scheme.

But, there was a more palpable cause of its failure still. I have spoken of Tull's success in comparison with that of his cotemporaries. And, looking at the state of agriculture in his time, seeing that the farmers' outgoings were so much greater than his, with their bare fallows, their heavy manures, their extravagant seeding, and their frequent and necessary ploughings, doubtless he had greatly the advantage; and had it not been for the difficulties of his plan, it might have made considerable progress at the time and for many years afterwards. The crowning result, however,—his actual produce per acre,—this, after all, has been the real stumbling-block in later times in the way of even a trial.

It is unfortunate that we have no *bona fide* balance sheet of Tull's average yield of wheat, from his own account book. For, calculations from ounces of grain and yards of land are of no account. We look for the measured crop stated and authenticated by his own hand, and we look in vain. Still, from a few scattered intimations here and there, and from the early editions of his work published in and about his time, we may gather that his general produce per acre was about *two quarters*. If any doubt existed on that point it would be removed by the statements of M. de Chateaufieux. He was an excellent farmer and one of the best and most energetic followers of the great master. His experiments extended over a large estate, and even with his improved implements, his more enlarged experience, with all appliances and means to boot, he can shew but an average of less than sixteen bushels. If, indeed, we consider the extent of ground occupied by the fallow interval—a space which Tull found necessary for the perfect development of his scheme—the amount of produce in reality was so great that, as an average, it could scarcely be more, fully bearing out the truth and goodness of his principles. For, the two quarters were taken from only a fifth part of the land, being at the rate of ten quarters per acre.

Still, in an island, with a limited surface and a population like ours, a yield of wheat like sixteen bushels over the whole acreage of the country would never be borne, nor, I suppose, would the worst farmer in England look at it for a moment.

Was the scheme, then, to come to nothing? I thought it ought not. Well worked out, with a change of practice, I felt assured it might become a mine worth the wealthiest diggings in the world.

*Were there no means, then, of making the process easier and safer?*—

Such, again, was the vigorous and healthy condition to which it brought the wheat plant, that, besides the closer growth of the stems in tillering, each ear on an average contained double the amount of grain, as compared with ears on the common plan; and the half portion of each acre in wheat would therefore yield double the amount of half an acre on the common plan. In other words—half an acre in this way would become equal in productive power to a whole acre in that. *Were there no means of effecting this?*

These two questions I boldly answer in the affirmative. And if in taking upon myself the responsibility of doing so, the answer be found to contain a great deal about me, I can only suppose it must be—as the gentle Esther supposed in her case—"because I have really something to do with it, and can't be left out."

There *are* means, then; I have tried them; have succeeded; and seen others succeed. Since the details of the scheme I practise and recommend have been matured, I have had years of trial upon wheat, and have given the result. I have succeeded, and seen others under my own immediate observation succeed, in gaining an average produce from half an acre, equal to a high average produce from a whole acre.

It would be a very useless and unworthy thing to make a statement such as this, if I did not believe that, with few exceptions, farmers generally could do the same. But, I most fully believe they might, to any extent. One little demand I must make, however. I must, with permission, presuppose an ordinary knowledge, on their part, of the duties and the details of ordinary good farming. For, the scheme is no wild offset from the brain of the theorist. It is a graft on the stock of acknowledged truths. It is essentially practical—a matter of the plainest common sense. I submit to certain rules, and so gain certain ends. It is owing wholly to my obedience to the one, that I accomplish the other. It cannot be otherwise. No one can evade the conditions with impunity. I have known the scheme tried upon wheat; and, in one case, it was thick sown in September; in another sown thin in November. I have known the great principle, pulverization, wholly disregarded, and the seed plastered in raw unmitigated clay; or committed to the untried mercy of the fresh-uplifted, unneutralized subsoil. I have heard of fat-fed thistles in the intervals overtopping the wheat at harvest. Yet more wonderful—I have seen a season of blight, and premature ripening, and almost universal mildew, amounting to a visitation; and, while wailings were heard on every side, that field of miraculous triple rows and yard-wide intervals was expected to be Gosheu.

In all these, and such like cases, there is a self-evident need of the exercise of the common gift of reason. That will teach a man to look for no miracle in any scheme ; to expect no success without a previous fulfilment of the means ; and farther to believe, that if success has been attained in even one case, it need not find a limit in ten thousand.

The process by which I carry out my plan is a very simple one ; and is given in detail and at length in the following pages. Briefly, it is this : I divide my field into lands 5 feet wide. In the centre of each land I drop or drill my seed in triple rows one foot apart, thus leaving a fallow interval of 3 feet between each triple row. When the plant is up I trench the intervals with the fork, easily taking my spits about 3 inches from the wheat, and at spring and during summer I clean them with the blades of the sharp cutting horse-hoe, and keep them open with the tines of the scuffler. Every year, in short, I trench and cultivate 2½ feet out of the 5 for the succeeding crop, and leave the other 2½ for that which is growing.

One moiety of each acre is thus in wheat, and the other moiety fallow ; and the average yield of that half acre is 34 bushels, grown without difficulty or danger in the execution, and surpassing the average yield of a whole acre on the common plan.

It will here be seen at a glance how I differ from Tull in practice ;—how the fork takes the place of the plough, and does better work in a narrower compass,—how the fallow is reduced from four-fifths of the land to only one-half ;—and how, in consequence, the produce is more than doubled at once.

But, the difference is far from ending here. I differ from Tull in this : I do not refuse manure. The essence of the scheme I propose, is, not that it dispenses with manure, but that, with manure, where required, it enables the farmer to draw from half an acre of land a produce beyond his now average produce from a whole acre. The wheat-land I am cultivating is unmanured ; for one portion of it is clay ; the other a gravelly loam. The former is fed sufficiently, and is safe. The latter, in parts, is hungry ; and, as I dig deeper, shews symptoms of sharp gravel, and these I shall dress with clay.

#### WHEAT-CULTURE IN THE UNITED STATES AND CANADA.

France, and the United Kingdom of England, Wales, Scotland and Ireland, contain a population of about sixty-five millions, who are fast acquiring that higher standard of comfort which enables the masses to consume good wheat bread in place of much cheaper vegetable food. For indefinite ages the great body of the people in Europe have consumed, comparatively, little wheat ; being compelled to subsist mainly on various kinds of pulse, potatoes, and other tuberous roots, and rye, oat, barley and corn meal. By

the discoveries and inventions in arts, and the advancement of sciences, their labor is far more productive now than it has ever before been, their wages are higher, and, consequently, they are able to live better, and are glad of an opportunity of so doing. Official returns made to Parliament show that the people of the United Kingdom have doubled their annual consumption of sugar in ten years—a remarkable fact, considering the comparatively small increase of population. In 1847, the British nation, before the discovery of gold in Australia and California, and when labor was not so well paid as it now is, imported for consumption 32,000,000 bushels of Indian corn and 4,464,757 quarters of wheat. In 1853, it imported 6,235,864 quarters of wheat, and only 14,168,856 bushels of corn. These figures show a decrease of the consumption of our Indian corn of more than half, and an increase in the consumption of wheat of about fifty per cent., in seven years. In Northern and Central Europe, in Italy, France and the United States, brown bread and corn bread are giving place to wheat bread whenever the former have long been eaten. “Rye and Indian” in New England, “hoe-cake” “pones” and “corn dodgers” at the South and South-west, are becoming historical. Place good wheat bread and that made of meal on the tables of the million, and the old habit of eating meal bread, or meal dumplings and porridge will in a few years cease to exist. The poor in Rochester pay eleven dollars a barrel for flour rather than consume meal at less than half the cost, because their wages are generally good, and they have always been in the practice of eating flour in this fine wheat growing district.

In the British West Indies, Cuba, Brazil and Central America, the consumption of our wheat flour is on the increase. We have before us the official Reports of all our exports and imports, of our commercial and other transactions with all nations, for several years, including the last. Attention is invited to the fact that the whole world took only \$1,374,077 worth of corn, and \$709,074 worth of meal, of this great corn-growing nation during the last fiscal year, ending June 30th, 1853 ; while it exported wheat and flour to the amount of \$20,000,000, within a small fraction.

Notwithstanding our pretty high duty on foreign wheat, Canada wheat-growers sold in the United States 1,297,131 bushels in the last fiscal year, and received for the same, according to custom house returns, only \$821,696. The returns for the present fiscal year, ending on the first of July, 1854, will doubtless show a much larger sale, and at a far better price.

To be a skillful and successful wheat-grower, one needs considerable professional knowledge. The most difficult points in the operation are to make the soil precisely what it ought to be, and to prevent its gradual deterioration by years of successive cropping. Where nature has made the land just right for the growth of wheat, its cultivation is as simple as any tillage possibly can be.

Many a soil abounds in both iron and alum salts (sulphates and phosphates of iron and



alumina), that lack only lime to decompose these often injurious salts, and form in their stead both plaster of Paris and the earth of bones. Where sufficient lime exists naturally in the soil, tillage effects the important chemical changes which we have just named. A calcareous soil yields far more clover and other herbage to be turned in with the plow, and feed growing wheat plants, than will grow on land that has only a minimum quantity of lime. To persuade a field to bear a generous burden of clover, or grass of any kind, we must see that the soil abounds in the things which nature consumes in the growth of such plants. If it has the constituent elements of crops, it needs no manure; but if these are lacking, then look out for ashes, bones, gypsum, marl, night-soil, subsoil plowing, swamp-muck and lime, stable manure, and all other known fertilizers. Little attention is paid to collecting the elements of grain and applying them to the soil. The amount of good wheat land in North America is much less than is generally supposed; while the number to consume wheat increases very rapidly.—*Genesee Farmer*.

#### THE HEMP TRADE.

Under the head of "Hemp from Canada," will be found an extract from a valuable article on "Canada," which appears in the last edition of the Messrs. Black's *Encyclopaedia Britannica*. At this time, when we are shut out from supplies of hemp from Russia, and when the prospect of the renewal of our trade with that country is remote enough, it is of the greatest importance to know that our dominions in North America may be able to furnish us with all the hemp which we may require, and that the quality grown may be made to rival the hemp of Russia. A double benefit will certainly be conferred on this country, if we are able to supply our own manufacturers with the article, and, at the same time, to give an impulse to an important branch of agricultural improvement in a country, whose interests are identical with our own.—*Belfast Whig*.

#### HEMP FROM CANADA.

The growth of hemp in Canada assumes a position of great national importance at the present time when British supplies have been so seriously checked by our war with Russia. The important towns upon the Eastern coast of Scotland, which are the chief seats of the trade, have suffered severely by the check received by the trade on account of our being so dependent on Russia for this great staple of a growing branch of our national manufactures. Were our own dominions in North America to supply hemp for our manufactures in future, instead of our being, as hitherto, so wholly dependent upon Russia for such supply, the change would be attended with signal advantage in more than one point of view. We would be giving employment to our own colonists, and thus fostering the growth of a country upon the verge of becoming a great nation, speaking our own language, and giving

proof to the world of the advantages of those enlightened principles of free government by which our own enviable national greatness and prosperity have been obtained. It may, perhaps, not be generally known that hemp grows spontaneously in Canada, particularly in all the lower or Eastern districts of the country. And it is stated, upon respectable authority that, under good cultivation, the quality is equal to Russian hemp. The soil and climate of Canada is believed to be eminently adapted to the growth both of hemp and flax. Very many years ago, the culture of hemp in Canada was commenced with all the earnestness and vigor which a well grounded confidence in the capabilities of the country for such production warranted; but, owing solely, it is believed, to the want of efficient modes of converting the raw produce into a prepared state, and thus securing an immediately profitable market, the culture of hemp in Canada, upon any extensive scale, was then abandoned. As memorials of the comparative success of the cultivation of hemp in Canada at that period, there at least were, not many years ago, and there may be still, farmers in Lower Canada holding medals from the British Society of Arts and Science for samples of hemp produced upon their farms. The elaborate work of the late Colonel Bouchette on British America affords a good deal of information in regard to the capabilities of Canada for the growth of hemp, and explains the causes of the comparative failure of these efforts, made many years ago, to introduce the cultivation of this important staple upon an extensive scale into Canada. Colonel Bouchette was Surveyor-General of Lower Canada, and a corresponding member of the Society of Arts in London, and he was therefore enabled, both from his official position and general acquirements, to furnish facts and opinions of unquestionable value bearing upon the subject in question. According to calculations of Colonel Bouchette, the cost of one ton of merchantable hemp landed in England would be not quite £21 sterling. The mean price of Russian hemp in the English market at that time was £40 15s. sterling. It is at least highly probable, from what has been stated, that an important national staple of our manufactures may be procured to any extent, of equal value, and quite as cheaply, if not more so, in one of our own colonies, as the same article for which we are now dependent for our supply upon an inimical foreign power, which may to the utmost of its resources, as has been now proved, place our interests in jeopardy to an inconvenient extent for some time, commercially as well as politically. The American navy use at present large quantities of native-grown hemp. Mr. W. B. Shubrich, chief of the bureau of construction, navy department, United States, in a report to the secretary of the navy, recommends greater attention to the detail of cultivation, curing and packing native-grown hemp, "which, in the opinion of the Bureau, would be found to be very beneficial in effect, and, in the course of time, make it altogether independent of a foreign market for a material so important for naval purpose." Mr. Gardiner, Superintendent of the

Ropework of the United States Navy-yard at Memphis, in a report of his department, further substantiates these views, concluding that, with proper care, "American hemp may (as experiment has proved) be made to equal, if not to excel, any foreign importation. The quantity of hemp and flax produced in Canada, taken together as officially returned, amounted, in 1852, to 1,917,666 lbs., being above 800 tons. The value placed upon this, by the Government Board of Registration and Statistics in Canada, is 3d. currency on £28 currency per ton, which, reduced to sterling, is £23 3s. The total value of the hemp and flax grown in Canada in 1852 was, therefore, according to his official valuation, £23,971 provincial currency, and very nearly the whole was the growth of Lower Canada.—From the article "Canada" in the *Encyclopædia Britannica*.

### FARMING.

Among the most vigorous class of people the farmer may be found. There are many ways by which men of this present age procure the necessities of life, but no occupation is more conducive to health and happiness than farming. There are several ways by which this may be exemplified.

First.—In order to make the muscles of the human body rigid and strong, they should all receive their due proportion of exercise. Those trades and kinds of exercise that tend to give every muscle its proper share of action, both of the upper and lower extremities, are most salutary, as it tends to develope and strengthen them equally.

Second.—The purer the air we breathe, the longer the muscles can be employed in labor.—What department can be more thoroughly ventilated than the open fields?

Third.—Light has as great an influence upon man as it has upon the plant, particularly that of the sun. You have doubtless noticed a plant that grows in the shade is weak and pale. The same is true of man; both, in order to make them strong, require the stimulus of this great agent.

There might be numerous other reasons brought forward to show that farming is most conducive to health; but it is useless to multiply them. In regard to happiness, I would ask but one question to be resolved in your minds. What is health but happiness? Knowing that farming promotes the greatest blessing, let each and every one of us be engaged in this business; for shop work, (particularly shoe making) does not bring the lower limbs into any action while the upper limbs are constantly employed. The air indoors, where laborers are employed, is not so healthy as it is in the great department or shop, owned by Uncle Sam, which was not planned by man, and needs no ventilation. In-door work is not exposed to solar light; hence let us devote ourselves to that which affords us the purest air, and which exercises the muscles in the right mode; and that, as we have already proved, is farming.—*Farmer and Mechanic*.

### AGRICULTURAL IMPROVEMENTS.

Since the days of Sir John Sinclair—the esteemed friend and correspondent of Washington, and one of the great men of the earth—no science has received more general attention than that of agriculture. This, at least, is particularly true with respect to the past twenty years' agricultural experience of our own country. When we look back over that space of years, and contemplate the many improvements in farming which have been made, we have great reason to congratulate our farmers for the spirit, intelligence, and good sense which they have exhibited.

### OBSERVATIONS

ON THE MAKING, CURING AND CASKING OF BUTTER.

We have been favored by the Hon. Adam Fergusson with a printed copy of the following directions for making and preserving Butter, as the result of numerous enquiries into the practices adopted in Ireland, and of the experience of several extensive curers in the county of Aberdeen, Scotland. Although printed several years ago, the observations will be found not devoid of interest at the present time, and in many respects applicable to this, or as it should be, very important department of Canadian farming.—Such as possess good soils for pasturage, will find it greatly to their advantage to pay stricter attention to the breeding and rearing of cattle and the improvement of dairy products.

1st. The milk-house or dairy should have no internal communication with any other building. It must be kept free from smoke, well aired, and clean; and no potatoes, fish, onions, cheese, or any thing likely to impart a strong or bad smell, should be kept therein. In short, nothing but the dairy utensils, which must also be kept sweet and clean.

2d. The milk, when brought in from the cows, should be strained through a fine hair searce or strainer, and, when cool, put into sweet well-seasoned oaken cogs, keelers, or milk-pans—the latter to be preferred. A tin skimmer, with holes in it, is the best for taking off the cream, which should always be churned while the cream is fresh.

3d. The churns, whether plunge or barrel, should be made of the best well-seasoned white oak; and, as cleanliness is of the first importance, great attention should be paid to the washing, drying, and airing of the churns, immediately after use, otherwise they are sure to contract a sour and unwholesome smell, which must injure the quality of the Butter.

4th. The Butter, immediately after being churned, should be thrown into fresh spring water, where it should remain for one hour at least, that it may grow firm; and, at the end of



the third or fourth washing, some fine salt should be put into the water, which will raise the color of the Butter, and purge away any milk that may remain among it. Before salting, it is very essential that no milk or water be left, otherwise a strong smell and unpleasant taste will be the certain consequence.

5th. The Butter thus prepared should be immediately salted. The proportions of salt may be from one and one-fourth to one and one-half ounce of Scotch salt for the pound of Butter; or, of the best stoved rock or bay salt, one ounce for the pound. But when Butter is not intended to be kept through the winter and spring, or for any long period, the quantities of salt above recommended may be somewhat reduced, the Curer exercising his own judgment in doing so.

N. B.—In Ireland, the use of salt and saltpetre, is recommended, in proportions of one ounce of stoved rock or bay salt, and one-fifth of an ounce of saltpetre to the Aberdeen pound.\*

6th. It is a very injurious practice to keep a making of Butter uncured to the next churning, for the purpose of mixing the two together. This mode invariably injures the flavor of the whole, and renders it of too soft a quality ever afterwards to get firm. This applies to Curers who are the producers of the Butter; but as the greatest quantity of the Butter in this county is collected and cured by merchants, they are particularly cautioned against the too common practice of throwing the fresh Butter together, and retaining it in that state for days, until they have collected what they consider a sufficient quantity to commence curing: the Butter treated in that manner is invariably found inferior to what is salted shortly after churning. Should, however, there not be a sufficient quantity collected in one day to fill a package when cured, the quality of the Butter may in a great measure be preserved, by giving it a partial salting, and covering it over with a clean linen cloth, dipped in pickle, and placing it in a cool situation. Country dealers who are in the habit of sending carts through the districts where they reside, to collect the Butter, should endeavor to arrange it so between themselves and the makers of the Butter, that it is churned upon the day it is called for.

7th. When the Butter is cured, it should be tramped firm into the firkin with a round wooden tramp-stick, of sufficient weight and thickness. The firkin should be filled up to the crose, and then covered over with a little of the purest salt,—sufficient room being merely left for the head of the cask, which must be well secured, to exclude air, and to prevent the pickle from getting out.

8th. The Liverpool stoved salt, or Portugal St. Ube's, or Bay salt, is, from strength and quality, always to be preferred. All salt must be kept quite dry, and at a distance from the fire, to prevent its imbibing the smell of the smoke. If kept in a cask, a little unslacked lime placed under it will prevent it from drawing moisture from the ground.

9th. The mixing of the salt with the Butter should be done in wooden dishes, after the water and milk are completely expelled, and no time should then be lost in tramping it into the firkin, which will make it draw even and firm.

10th. The milk of new calved cows should never be set for Butter until at least four days after calving, as a small quantity of beast-milk Butter will injure a whole firkin. The practice of scalding cream in cold weather should also be avoided, as cream thus treated will never make good Butter.

11th. Great care should be taken not to steep the firkins in boggy or unwholesome water.—Nothing but the purest spring or clear running water should be used for that purpose; and the firkins should be rendered perfectly dry inside after being steeped, either by long dipping, or by being rubbed with a smooth towel. Old Butter should never be mixed with new; and the lining of the casks with inferior sorts, or grease Butter, is a practice which cannot be too much reprobated.

12th. The casks ought to be made of the best oak or ash, (the former be to preferred) and the largest size should not exceed 84 lb. gross, or 3 stones Aberdeen Butter weight, that being the size used in Ireland, and most convenient and saleable in the London market. The casks should be tight and well hooped. Beech, plane, arn, &c., should never be used, as that quality of wood is more apt to absorb the pickle, and independent of the injury thereby occasioned to the Butter, it will often lead to disputes about the tare.

To render these observations more complete, it might be thought necessary to point out the injurious, and even nefarious practices, which more or less prevail in the making of Butter throughout the county; but as a perseverance in such practices must ultimately have the effect of entirely destroying this profitable branch of agricultural industry, it is hoped the makers of Butter will see it to be their own interest to produce nothing but Butter of the best quality, and that these mal-practices, which are perfectly known, will be discontinued. The dealers in the country have it in their power to put a check to them; and it is expected they will do so, by refusing to purchase from those who adopt any artificial means to hasten the making of the Butter, or to increase the quantity, while the quality is thereby deteriorated.

#### A FEW WORDS ON BUTTER MAKING.

The production of butter involves so many intricate questions of organic chemistry—so many nice physiological considerations—is influenced so much by climate, by soil, by food and the breed, age and condition of the cows, that an essay might easily be written on the subject, while it is exceedingly difficult to say any thing interesting in a single short article.

Milk contains curd, sugar of milk, and butter. The latter exists in the form of small oily globules, encased by films of curd. These globules

\* All these calculations are made for the Aberdeen Butter pound, of 25 ounces Averdupois, and the salt of 16 ounces to the pound, of same weight.

are specifically lighter than water, so that when the milk is allowed to stand, they gradually rise to the surface and constitute cream. When the cream is kept at a moderate temperature, the sugar, under the influence of the curd and air, is transformed into lactic acid, according to well-known chemical principles.

The object of churning is to separate the butter from the curd by which it is surrounded. This is accomplished simply by agitating the cream and *breaking the films of curd*, setting the oil free which runs together and forms lumps of butter. Cream, from the formation of lactic acid, is generally sour before churning, and if not, always becomes so during the operation.—The lactic acid acts on the films of curd, and renders them more easily broken. During the process, the cream increases in temperature from 5° to 10°. The best temperature at which to churn the cream is a disputed point. It appears, however, to be well established by numerous experiments, that 55° when the cream is put in the churn, and about 65° when the butter comes, affords the best result. If higher than this, the butter is white and soft; if lower, the whole of the butter is not separated, and the labor of churning is much increased. The butter should come in from 20 to 40 minutes. If obtained quicker, it is generally at the expense of color, flavor and hardness. After the cream is "broke," it should be churned slowly till the butter is gathered.

Some good butter-makers do not wash the butter at all, merely working out the buttermilk by pressure. Where good, cool, spring water can be obtained, we should always prefer to thoroughly wash the butter, taking great pains to remove all the buttermilk. Butter generally contains about 15 per cent. of water, curd, &c.—It is important for the preservation of butter, that as much of this as possible should be removed. The quantity of salt required, depends upon the quantity of water in the butter. The water should be *saturated* with salt; hence, the less water the butter contains, the less salt will be required for its preservation.

We need hardly say that the most scrupulous cleanliness is required in all the operations of butter-making. Cream is more easily tainted by noxious gasses than almost any other substance. Hence, not only must the dairy or cellar be itself clean, but all fumes from the barn-yards, or out-buildings, carefully excluded. *Rural New Yorker.*

#### TO CHOOSE A GOOD MILCH COW.

**BREED.**—We find good milkers in all breeds, but they are rare in some, and very common in others. It could not be otherwise. Milking properties, depending on the conditions which determine the formation of the breeds, are due partly to the climate, the soil, the air, and the plants of the countries where the breeds have originated; and must, therefore, vary in our different breeds of horned cattle with the hygienic conditions peculiar to each locality.

Milkers, and more especially animals intended for breeding, must always be selected among breeds celebrated for abundance of milk. Not that we can hope to import into our departments, with a dry and warm climate, all the qualities of the excellent milking breeds possessed by countries in which the soil is fertile, the air moist, and the sky cloudy; but, as the influence of climate, though very marked, take effect only in the long-run, the properties of the animals imported are maintained—though subject, doubtless, to gradual deterioration—during a period which varies with the precautions taken to preserve them; and for several generations the descendants of the individuals of a good imported breed give more milk than individuals belonging to a breed formed on the spot, when hygienic circumstances are not favorable to milking properties.

It is not to be forgotten, moreover, that under the influence of particular circumstances, which it is sometimes impossible to call into existence, animals manifest properties which we cannot produce daily. This explains why it is often more advantageous to import qualities possessed by foreign stock, than to try to develop them in native stock.

Here we deem it sufficient to observe, that good milking breeds are distinguished by a soft and supple skin, and by tissues rather relaxed than rigid; are not hardy or fit to bear fatigue (sweating easily, and falling off rapidly when put to work); are difficult to keep, seldom fat, and have often little flesh on the buttocks.

**DESCENT.**—As milking qualities are, in a great measure, depending on structure and temperament, which are more or less hereditary, descent exercises a great influence.

In each breed, therefore, we should choose individuals belonging to the best stocks, and the offspring of parents remarkable for their milking qualities; for it is certain that good milk cows produce others which resemble them.

It should be our object, then, as far as possible, to obtain cows engendered by youngish bulls, whatever be the race to which they belong.

But it is, especially, when selecting stock for the purpose of breeding milk cows, that particular care should be taken to select individuals belonging to good families. A cow not of a good milking family, or even breed, may occasionally be an excellent milker, and more than this is not wanted when it is not meant to breed from her. The same cannot be said when breeding is intended, because there would be little chance of her transmitting the accidental, or exceptional qualities possessed by her; whereas the qualities forming the fixed and constant characters of the stock would, almost to a certainty, be transmitted to descendants.

These remarks with regard to breed and parentage, apply to the selection of the bull, which, as experience demonstrates, acts, like a cow, in transmitting the milking qualities which distinguish the breed and stock.

**SHAPE.**—Active mammary glands are seldom found united with the graceful, rounded forms which constitute what is vulgarly called *beauty*



in quadrupeds. Most frequently good milkers have sharp points, and appear more or less loose and flabby. In regard to bony structure, they may be as well formed as cows remarkable for their readiness to fatten, or ability to work; but, being seldom in plump condition, they seem lean and raw-boned.

**CONSTITUTION.**—It is desirable that the special marks which indicate a great activity of the milky glands, and, consequently, a good milker, should be united with those which imply a good constitution. These are large lungs, a broad and prominent chest, a somewhat low respiration, an abdomen of moderate dimensions, a good appetite, and a great inclination to drink—an inclination stimulated by the abundant secretion of milk. Such cows eat much, digest easily, and breathe well; they make *good blood*. This fluid gives activity to the nervous system, makes all the organs lively, and furnishes the glands with the materials of a copious secretion. Cows possessing these properties last long, give much milk, and, when they become dry, soon fatten.

**GENERAL APPEARANCE.**—In all breeds, the preference should be given to cows which in form are the farthest removed from that of bulls; to cows with small bones, fine and slender limbs, and a tail which is fine at its base; a small but longish head, narrowing towards the horns; the horns themselves of a bright color, tapering finely, and glistening; a supple and soft unctuous skin, covered, even to the forehead, with erect, glossy, soft hair, and provided, near the natural passages, with a short, fine, and silky down; a small neck, and shoulders (*encolure*) apparently long, because slender, especially near the head; small eyelids, well divided, but not much wrinkled; prominent eyes, and gentle feminine look.

**TEMPERAMENT.**—With these marks of a feminine description, cows should unite a sanguine lymphatic temperament, and especially a mild disposition. Good milkers allow themselves to be easily milked; often, while ruminating, they look with a pleased eye, easily recognized, at the person who milks them; they like to be caressed, and caress in return.—*London Veterinarian*.

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**A TWIG WHICH EVERY FARMER SHOULD KNOW.**—If you wish to drive a cut nail into seasoned timber, and not to have it break or bend, just have a small quantity of oil near by, and dip the nail before driving, and it will never fail to go. In mending carts and ploughs, this is of great advantage, for they are generally made mostly of oak wood.

In straightening old nails before using, let it be done on wood with easy blows; if done on iron, they will be sure to break.

**TEST FOR SOUND EGGS.**—The larger end of a newly-laid egg feels cold when placed against the tongue. A newly-laid egg, also, appears semi-transparent when placed between the eye and a strong light, and has a small and perceptible division of the skin from the shell, which division is filled with air or gas. If an egg shakes, it is sure that it is stale.

## Communication.

### ON THE MODERN SYSTEM OF DRAINAGE, AND ITS APPLICATION TO CANADA.

#### No. IV.

To "first catch your hare" is as essential a preliminary in drainage operations as in those of the cuisine; for unless materials of a suitable description can be obtained within an available distance and at reasonable prices, it is in vain to expect any considerable progress to be made in works which must necessarily be confined within certain limits as to cost. Having then already shown that the cylindrical Tile is the most perfect for all ordinary purposes, we shall proceed in the first place to give a few plain directions for its manufacture, and conclude our present series with some remarks on the depth and distance of drains, and the effects to be produced.

Now, as affording to the agriculturists the best guarantee for their early introduction throughout the Province, and at the same time to the manufacturer a profitable addition to his business, we would suggest to the established Brickmakers of the country the advantages of manufacturing Drainage and Sewerage Pipes, as well as bricks. We could enumerate hundreds of instances where this has been done in England with great advantage to the district, and a corresponding remuneration to the maker. And as evidence of the certainty of success, and of the demand for the articles growing and increasing with their production, we have ourselves established Tileries in localities where previously the use of a draining tile was hardly known, which in a few years afterwards were second to none in the kingdom for extent of business; and so it will no doubt be in this country when once the benefits of realization are felt. Already in one instance at least has an example been set at Toronto by one of the oldest Brickmakers there, which is deserving of notice, and where the orders for Pipes will form a very considerable item in the products and profits of the establishment during the present year. And further, we are desirous in our professional capacity as a Drainage Engineer of contracting for a supply of 300,000 and upwards of different sized Pipes to be delivered for the drainage of property in the Cobourg District.

In an established brickyard the only things at first required for the manufacture of pipes are a wooden shed of moderate extent (which can be enlarged as the business increases); a claymill, and a machine for moulding the pipes. Until the demand justifies the outlay, it is not necessary to incur the expense of erecting covered kilns, because by taking care to set the pipes away from the fire poles and in the middle they can be readily burnt in the ordinary brick clamps. As the demand increases, however, it will be found desirable to build one or more arched kilns for the exclusive burning of pipes and the better description of bricks, flooring Tiles &c., moulded from the machine. In building the shed there is no need to put up any great length of shelving, as in the case of hand-made tiles; all that is necessary being two or three lines of shelves

raised a little from the ground and parallel to each other, with an alley of sufficient width for the machine to work in, upon which to place the pipes as they come from the machine in successive rows, one upon the other, as the lower course becomes dried and capable of supporting the fresh-made pipes. As regards the machine, our readers may be aware that a patent has been granted to us for the Province for a machine for moulding all descriptions of tiles and pipes for drainage and sewerage purposes, as well as bricks, flooring tiles, &c., for building, from clay or other plastic substances, and we are now fully prepared to deliver machines to order in any part of the Province, or to grant licenses for their manufacture to respectable and responsible parties for specified districts. These machines, worked by a man and three boys, will mould, according to sizes, from 5,000 to 10,000 feet of pipes per day; and that parties may not be disappointed, we shall be ready to give personal attention to the starting of each machine, if desired, as well as all the information in our power for the general management of this branch of business. For ordinary drainage purposes a machine capable of moulding a pipe of six inches internal diameter as the maximum size, is ample; but where pipes of larger dimensions for sewerage of towns are likely to be required, a machine of corresponding strength and capacity must be used. The price of the machine for general drainage pipes, bricks, &c., is £50, (half in cash and the remainder in six months) inclusive of five dies for moulding pipes; the dies for brick, flooring tiles, &c., &c., being charged separately in addition. We guarantee the effective working of the machine, which is accompanied by printed instructions for its management. It is hardly necessary to say that the clay must be properly ground and prepared, and used much stiffer than for common brick moulding, so that the pipes, &c., may retain their form. No sand or water is needed in the moulding; the process by the machine being almost as neat and clean as that of turning off the printed sheets from a steam press. It may be well to add, that in setting the pipes in the clamp or kiln they must be placed upright on their ends; and whenever the sizes will permit the smaller may be put inside the larger.—This arrangement, however, can only be of limited application, because the proportion of the smaller pipes for drainage will always greatly exceed that of the larger sizes.

As we have already intimated, the depth, distance and direction of drains must be governed by circumstances, general rules being for the most part insufficient unless the work be set out and directed by an experienced drainer. In order to be out of all harm's way, however, from frost or other causes, drains should never be less than three feet deep; the interval in clay lands will vary from 18 to 30 feet, and in the more open soils from 30 to 100 feet; and the direction of drains should, whenever practicable, be parallel to each other and directly up the face of the fall—not obliquely, as was too often the practice in former years when the operation was less perfectly understood. Under certain conditions of

situation, surrounding formation, and substratum, we have seen drains, laid with four such pipes, at a depth of from five to eight, and from 100 to 200 yards apart, act most effectually in draining extensive areas of land, at a comparatively insignificant cost; and we are inclined to think that there are many situations in this country where such a system would be very effective and economical. In commencing the drainage of an area of land, the outfall and main drain must be first attended to, and cut, and be laid with pipes of a suitable size, care being taken to provide for the entrance and junction of all the tributary drains as the work progresses. These junctions with the main drain must be very carefully made, or stoppage is apt to ensue—so much so indeed that all the best practitioners of the present day use junction pipes in the main with a bell-shaped projecting mouth-piece which admits the end of the small drain pipe, and retains it safely and firmly in its place. Collars over the pipes will in some subsoils be necessary, but we do not by any means advise their invariable use; unless absolutely indispensable they only add to the cost of the work without any adequate benefit. The skilled workman in cutting a drain, always keeps the section in a perfect V form, with a uniform slope on each side to the bottom, which is scooped out as he proceeds to the prescribed grade and to the precise external dimension of the pipes to be laid. The width at the top is regulated by the depth to be cut and so as just to leave room for the workman to stand, thus circumscribing the amount of earth to be removed within the strictest limit of economy in labor. The cost of cutting the drains forms under favorable circumstances a considerable proportion of the entire outlay, and must therefore, with the high price of labor here, be to some an obstacle; but as “there is never a hill without a dale,” so the readiness with which mechanical appliances are adopted in this country, coupled with advantages which it possesses meteorologically for economising the operation, will, in all probability speedily adjust the general average expense to a true equilibrium. In England the inducement to the inventor to apply his talent and energy to perfecting an efficient machine for cutting drains, is very small, for he is quite certain to expend a considerable sum in the attempt, and very uncertain of its being adopted even if perfectly successful. It is otherwise, however, in this Province, and we venture to predict that ere very long drain cutting machines will be as common and in as successful operation as reapers. A very little encouragement would make us try our hand at it; and as we have some already half-digested notions on the subject, those who would be first at the patent office must not be idle.

As regards the effects of good drainage, there can be no more convincing proof than its general application, and the fact that although millions after millions are expended upon it, the anxiety to have estates and farms drained on the modern system increases with every fresh example; and on lands too, which, at one time, would have been thought sufficiently dry. It is not now, as formerly, when drainage was advocated, that



men admitted its advantages on land they knew nothing about, but always questioned its efficiency "on our land." To adduce testimony of the benefits of drainage at this day would be to enumerate almost every Parish and Landowner in Great Britain: and indeed so world-wide patent is the "great fact," that it would be just as reasonable to doubt the full reality of the Californian and Australian gold fields as that of the equally certain and hardly less direct productiveness of the English diggings.

In the whole of our experience, both as an Assistant Commissioner under the Drainage Acts, and as a private practitioner, we have never known an instance in which the immediate money return from drainage was less than 10 per cent,—but in the great majority of cases it is at least double this; and we have seen instances out of number, where the additional yield of the first crops of the drainage has more than paid the entire cost of the work. An extra produce of 20 bushels per acre is very common on strong land, which at 5s. per bushel repays the outlay the first year, to say nothing of succeeding ones. But this is not all, for the character of the soil is so ameliorated that the cost of cultivating the land in its drained state is reduced by at least 10 per cent; and furthermore, that old enemy of the farmer, *the season*, is brought to capitulation, and soon becomes his acknowledged and appreciated ally.

Although, as we have said, to quote English testimony would be to give the unanimous assent of every landowner and occupier, it may be serviceable to refer to special instances on this side the Atlantic where something like the present improved system of drainage has been tested and the results found to be as satisfactory and profitable as in England; indeed in many respects the benefits to be derived in this climate will be more marked and tangible than in the mother country. The following are extracts from the reports of drainage experiments in the State of New York, addressed last year to the Committee of the New York State Agricultural Association, for the prizes offered by that body for drainage; the first is from Mr. John Johnson, of Geneva, who says:—

"In order to show the benefits derived by me, the following remarks will be necessary; to me, the results are very satisfactory and conclusive: My farm is on the east side of the Seneca Lake, opposite to Geneva, and immediately adjoining the farm of your honorable president, John Delafield, Esq. About six years ago I began to drain a field on the boundary line between Mr. Delafield and myself. The field contains about twenty acres; of which, six were then subject to drainage. The six acres had seldom given a remunerating crop, even of grass. After draining the six acres, the whole field was plowed and prepared for corn; two acres being reserved for potatoes. The usual care was given to the cultivation of the whole crop, which, during its growth, showed a marked difference between the drained and undrained portions of the field; the yield of this field proved to be the largest ever raised, as I believe, in the county; the

product being eighty-three bushels, and over, per acre. When the corn was husked and housed, it was weighed and measured in the ear; and allowing *seventy-five pounds* to the bushel, as has been customary in this region, for corn and cob, the product was as above stated. This field attracted much attention from my neighbors and other gentlemen from more distant places. It was examined at the time of draining; and after plowing, both the first and second season, permitting the parties to walk on the drained parts, without any undue moisture, while all the other undrained land in the neighborhood was muddy; and, as before stated, the corn was found to be far more vigorous in the plant and abundant in the grain. In the following season after the corn, I cropped it with barley, and found the drained land produced altogether the finest plant, and the best yield of grain. When the barley was harvested, I prepared the field and cropped it with wheat. The difference again was so striking and distinct in favor of the drained land, that I felt the propriety of thoroughly draining the whole field, which was completed without loss of time, at a cost of twenty-two dollars per acre for the whole field. I then plowed and sowed with barley and seeded with clover; of the latter, I cut a very large crop last summer, and not one square foot of the clover froze out; and now I can rely on a good crop of anything I may sow or plant. I had previously drained several other fields; or, at least, those parts that needed drains. Encouraged by a considerable increase of products, derived from my farm from draining, I determined to extend the system as rapidly as convenience and circumstances would permit. Upon examination, it appeared necessary to possess a piece of ground belonging to a neighbor, that I might secure a good and sure outlet for the water from some of my upland fields that required draining in places. With this view, I purchased ten and three-fifth acres of low land, saturated with water. A part of this land, say about four acres, from twelve to eighteen inches of the surface of the surface, was a black vegetable mould, lying on a stratum of clay of the same depth, under which I found a hard bottom for my tiles, not over three feet in depth. I felt persuaded that those ten acres were wet from my own upland, as well as from my neighbor's wet land adjoining. The first ditch I dug was directly on the line betwixt the land I got of my neighbor and that he still owns. This I found cut off all the water on that side.—I then commenced draining that ten and three-fifth acres; also about thirty acres of upland.—A large proportion of the upland did not require draining. In the two pieces, which, made into one field, containing about forty acres, I laid one thousand, seventy-two and a-half rods of drain, which have drained the whole extent in a thorough manner. The flow of water is so large at times, I was compelled to use a large number of the largest sized tiles; and for main drains, as I had to have three, I had to lay double rows of four-inch tiles; and in one locality I had to use a double row of six-inch tiles for over fifty rods; this received a great flow of water from a public

road, which was let into the tiles by digging a basin at the upper end of the drain, and then filling with small stones over the tiles. These extra-sized tiles increased the expense of these drains, making one thousand seventy-two and a-half rods to cost about forty cents per rod.—The first year after completing the drains on this field, the whole, or nearly the whole, upland and all, was planted with corn. The season was not favorable for that crop in this neighborhood; yet the crop was fair—say forty bushels shelled corn to the acre. The low ground was excellent, where nothing but coarse grass grew for twenty years before. This year, 1851, I harvested from this field a crop of wheat; and a heavier crop I never saw to stand up. Heretofore many acres of wheat were lost on the upland by freezing out, and none could grow on the low lands. Now there is no loss from that cause; only two small patches, in all less than one quarter of an acre, was lodged. In fact, the whole field was so even that it was difficult to pronounce any five acres worse than the rest. The wheat fly or weevil injured a little, but I think not a great deal. I have not threshed enough to know the yield of wheat per acre. The wet ground got from my neighbor was the source of much curiosity to all around, as none would believe wheat could be ripened on land so long saturated with water.—It was watched, therefore, from the time it came above ground, in the fall, until the last of it was harvested. The result was a crop of wheat from that ground, abundant in quantity and excellent in quality.

Such, gentlemen, is the result of my labor in draining. I have forty acres of wheat now growing on land thoroughly drained. The improvements in my fields and crops have been great and satisfactory, giving me fine crops of wheat, where it formerly froze out. So well satisfied am I of the advantages derived from the system, that I have drained six acres this fall; and shall continue to drain while I have a wet spot on my farm. In regard to cost, I find that drains constructed with two-inch tiles can be finished complete for thirty cents per rod; yet something must depend on the digging, whether the earth be hard or soft, and the distance to draw the tiles; mine have all been drawn five miles, and I find that two-inch tile are large enough, except for main and sub-main drains. In my own case I was compelled to feel my own way and discover the best system and best adaptation to my lands, consequently the drains have cost me more than they would if I were to construct them with my past experience."

A second from Mr. T. G. Yeomans, of Walworth, speaks thus:—

"Some of the advantages derived from draining are, that the ground becomes about as dry in two or three days after the frost comes out in the spring, or after a heavy rain, as it would do in as many weeks before draining; enabling the farmer to work his land at almost any time he may desire to do so; it also dries it uniformly alike all over the field, so that in plowing, he does not find spots of wet and dry, but is all in good condition at once; it causes the lowest places, which

were generally too wet at seed time, and consequently produced but little if any crop, to produce the best of any part of the field, being generally the richest soil, from having had the wash of the surface of the land about it for many years.

Some of the land I first drained had been planted with young orchard trees, and in the wettest places some trees died the first winter, and a greater number the second; and some young nursery trees on the same ground were nearly thrown out of the ground by the frost.

After draining it, I replaced the orchard trees, and all have grown well; and the first crop of nursery trees, which I was compelled to remove, to save them, before draining, have been replaced by others since draining, and they have succeeded perfectly, so that I may now well say that, if we desire to deprive Jack Frost of his power to do us harm, we should keep everything as dry as possible which is within his reach and liable to injury; and I am from my own experience fully convinced that for whatever crop, and especially any crop liable to be injured by frost in winter, such as wheat, clover, &c., whether the season be wet or dry, if the soil retains its moisture too long at any season of the year (and most soils do), it will be materially benefitted by draining; and in fact I am well convinced that most of the winter-killed young fruit trees, especially the peach, in many places, as well as the winter-killing of many valuable shrubs, vines and evergreens, which survive the winter in some places in this latitude, and are destroyed in others, is more to be attributed to excessive moisture in the soil during cold weather than to all other causes combined. I will only estimate the increased value of the land, by saying that I have, the past year, made over 1,200 rods on 20 acres, at a cost of about \$25 per acre; and that I should not permit such land to remain without such draining, even were the expense doubled.—Most of the lands, so drained, have been purchased by me immediately preceding the construction of the drains, and their very recent construction precludes the possibility of giving the specific and comparative productive capacity before and after draining; though on much of it very light crops have been grown for many years past, and no good crop of wheat has been raised on it for a long time; but the reason has not heretofore, to my knowledge, been ascribed to an excess of water, which I believe to have been the principal cause of the non-productiveness of the land. From the experience of two seasons on the small quantity first drained, I am of the opinion that the increased value of the land is much greater than the cost of constructing the drains; but more time is needed to fully test with accuracy the benefits to result therefrom.

Thus I have in three years constructed over nine miles of drain, of the three kinds herein named, on lands which most farmers thought unnecessary to drain, and which they felt assured *could not be drained with profit*. But notwithstanding, I doubt not the result will be not only a source of profit to myself, but a great inducement to many to commence the work."



And a third is from Mr. J. McDonald McIntyre, to the same effect:—

“My success in this trial has decided me to go on. I have this season laid within a fraction of three miles of tile—draining by it about 30 acres thoroughly and five more partially so. The cost this year has averaged about 40 cents per rod; a large proportion of my work this season has been with main drains, using the four and one-half inch tile, and several rods laid with that tile double. As the work progressed, I have taken up about three-fourths of a mile of open ditch which I found upon the farm, reclaiming in this way nearly an acre of ground heretofore useless for cultivation, and a nursery for weeds. This, according to the value of land here, may be fixed at \$100, and forms an item not to be overlooked.

A portion of my work this season has been given to some side-hills, which, from the general level of the farm, make a steep descent to an alluvial bottom, lying about 100 feet in width on both sides of a small stream. These hills are full of springs, which break out about midway or higher up the face, filling with water the land below them. I tiled about five acres in one field, by sending the lateral drains directly up the hill at 56 feet apart; this was done in April last.—When the drains on this piece were closed up, and no rain having fallen during the work, the mouth of the main tile,  $3\frac{1}{2}$  inch, discharged itself nearly half full, and continued to do so for some days in succession, and, without one day's intermission, has discharged more or less through the whole of our dry summer.

I know, of no improvement or management that could, on my land, have taken its place, or given me the great benefit that it has done, so far as I have extended it. I have, however, given the labor to those fields that stood most in need of it—some of them worthless without it.—I have, therefore, seen greater benefits arising from it than much of my future work may yield me. This, however, cannot make what I have done the less valuable. So satisfied am I of its great aid to me, that I shall extend the work as rapidly as I can conveniently do so.”

Space will not admit on the present occasion of entering at much length into the climatic, or the detailed influences of effective drainage. To produce any very noticeable difference in climate the work must be pretty generally extended; nevertheless it is but a matter of time; but the effects on each farm or portion of land drained are at once perceptible, and therefore we will briefly refer to a few of the most palpable results. On properly drained land the rain does not run off carrying with it to the nearest gutter and creek the best particles of the soil, but it sinks where it falls into the land, taking with it to the roots of the plants all those fertilising properties which rain is known to contain. At the same time the drainage water brings with it in its exit from the drain, many of those hurtful qualities which soils invariably contain, that have been for ages subjected to the saturation of stagnant water. Good drainage produces and keeps up with each successive shower an aeration of the soil and subsoil,

which not only tends very materially to improve its mechanical condition and texture, but at the same time to promote vegetation. We have on many occasions, in drained land, seen the roots of the wheat plant descend to a depth of more than two feet; and in the more open subsoils to beyond three feet, ensuring great strength and vigor in the plant. Drainage also warms and equalises the temperature of the land, thereby ensuring a greater uniformity in the growth of the crop. And from preventing that excess of evaporation which, in this climate more particularly, is extremely prejudicial to animal health, it tends materially to prevent those noxious exhalations which are the insidious seeds of epidemic and other diseases both amongst man and beasts. By securing the ready filtration of the heavy and more continuous rains of spring, it admits of farming operations at that important season, being conducted with less interruption and greater certainty; and it produces a more uniform and early maturity in the crops and the quality of the sample. The proportion of small grain or winnowings from corn grown on drained land is always considerably less than from the produce of undrained soils, each head of grain grown on the drained land being fully developed. When land is drained, high ridges and furrows should immediately be dispensed with, and the land be ploughed flat as if naturally dry; the necessity and expense of cutting surface channels to carry off the rain from newly sown ground will also be saved by drainage; and in fine, whilst it adds abundantly to the productiveness of the land, it diminishes in no less a ratio the whole of the expenses incidental to its cultivation.

In conclusion, and as bearing with more than common significance on the subject in hand we would direct attention to a passage from the pen of one of the most practical thinkers and statisticians of the day, the present English Registrar General, and whose sources for observation are much beyond those of most other men. In the Quarterly Return, No. 11, 1851, under the head, “Increase of Population,” he remarks:—“The present movement of the population is in many respects remarkable. The free admission of grain, meat, and fruit, since the scarcity, is equivalent to an addition to the country of a vast tract of fertile soil which calls for cultivation; and (as the land is abroad) for agricultural emigrants who prefer the cheap, though distant lands of America, to the high-rented farms of Ireland, which no longer possesses a monopoly for its produce in the English market. The fact deserves attention, that while the United Kingdom has been importing food in unprecedented quantities, it has been sending out swarms of emigrants, from the population of which the marriages and births promise to keep up a perpetual and increasing supply.” When, then in conjunction with this assurance of perpetual, and increased emigration bringing consumers to these shores without diminishing the necessity for enlarged supplies at home, we reflect on the present condition of Europe, which under any circumstances must greatly disarrange the production of human food; and when we take also into account the fact, that the surplus of pro-

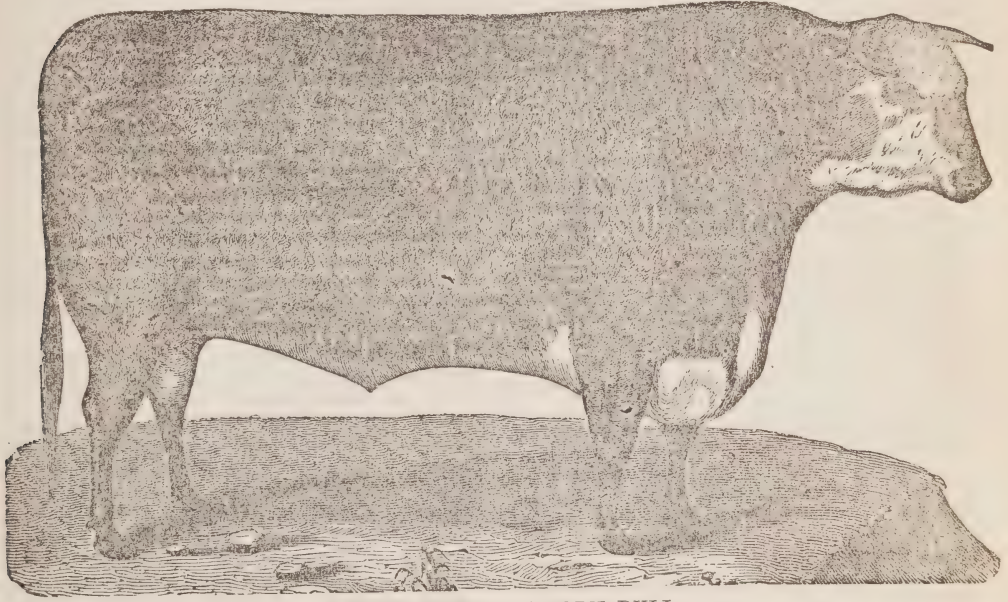
duction over consumption is yearly decreasing in the United States, the agricultural horizon of Canada looms before us like a great reality, with a degree of prosperity which shall justify and encourage all the energies and resources within her reach for advancing her cultivation to the highest point of practical excellence. Let it not be in the power of the historian to record of her that prosperity induced apathy, and that with half the world looking up to her for sustenance she failed to seize the proffered reward; but ra-

ther let her be able nationally and individually to exclaim, with Tusser, in an hour of conscious exultation:

"I have no labor wanted  
To prune this tree thus planted,  
Whose fruit to none is scantied  
In house, or yet in field;  
Which fruit the more ye taste of,  
The more to eat ye haste of,  
The less this fruit ye waste of,  
Such fruit this tree doth yield."

J. H. CHARNOCK.

Hamilton, August, 1854.



A MODERN SHORT-HORN BULL.

## THE OX.—HISTORY, MANAGEMENT, &c.

### THE SHORT-HORNS.

This account of the Short-horns is by the Rev. Henry Berry, than whom there were few more zealous breeders of cattle.

It must be admitted that the short-horns present themselves to notice under circumstances of peculiar interest. Possessing in an eminent degree qualities which have generally been considered incompatible, and attractive to the eye by their splendid frames and beautifully varied colors, it is not surprising that they have become objects of public curiosity; that they have realized for their breeders enormous sums; and that, in our own island, and in every foreign country where agriculture is attended to, they are in increasing demand.

It might tend to throw much light on the science of breeding, could these animals be traced, in their improvement, to an earlier period than has been found possible.

From the earliest periods as to which we have any accounts of our breeds of cattle, the counties of Durham and York have been celebrated for their short-horns, but principally, in the first instance, on account of their reputation as ex-

traordinary milkers.\* It may be asserted, on the best evidence, that, as a breed, they have never in this particular been equaled. They were generally of large size, thin-skinned, sleek-haired, bad handlers, rather delicate in constitution, coarse in the offal, and strikingly defective in girth in the forequarters. As milkers, they were most excellent; but when put to fatten, were found slow feeders; producing an inferior meat, not marbled or mixed fat and lean, and in some cases the lean was found of a particularly dark hue.

A period of more than one hundred years has now elapsed since the short-horns, on the banks of the river Tees, hence called the Teeswater breed, had assumed a very different character to the foregoing description. In color, they resembled the short-horns of the present day, being occasionally red, red and white, and roan,

\*Before this a large and valuable description of cattle had existed on the western coast of the continent of Europe, and extending from Denmark to the confines of France. They were celebrated for the great qualities of milk which they yielded, and some of them exhibited an extraordinary aptitude to fatten. At what particular time they found their way to England, or by whom they were imported, is unknown; but there is a tradition that, towards the close of the seventeenth century, a bull and some cows were introduced into Holderness.—*Youatt*.



though the last not then so prevalent as now. They possessed a fine mellow skin and flesh, good hair, and light offal, particularly wide carcasses, and fore-quarters of extraordinary depth and capacity. When slaughtered, their proof was extraordinary, and many instances are recorded of the wonderful weight of their inside fat.

The remarkable merit which existed in the Teeswater may, with propriety, be ascribed to a spirit of improvement which had some time manifested itself among the breeders on the banks of the Tees, whose laudable efforts were well seconded by the very superior land in the vicinity of that river. No doubt can be entertained that they proceeded on a judicious system of crossing with other breeds, because it was utterly impossible to raise such a stock as the Teeswater from pure short-horn blood. One cross to which they referred was, in all probability, the white wild breed; and if this conjecture be well-founded, it will be apparent whence the short-horns derived a color so prevalent among them.

It is also asserted that, about the period in question, Sir William St. Quintin, of Scampston, imported bulls and cows from Holland, which were crossed with the stock of the country. It would tend to little advantage to conjecture as to what other breeds were resorted to, if any; this much is certain, that great improvement was soon manifested, and a valuable variety established, as the two following instances will prove.

Mr. Milbank, of Barmingham, bred and slaughtered an ox, which, at five years old, weighed four quarters, one hundred and fifty stones, (2114 lbs.) of fourteen pounds to the stone, producing sixteen stones of tallow; and a cow bred from his stock, slaughtered by Mr. Sharter, of Chilton, at twelve years old, weighed upwards of one hundred and ten stones. (1540 lbs.)

From Mr. Milbank's time, the Teeswater cattle continued to sustain their excellence and celebrity in various hands, until Mr. Charles Colling adopted them.

Whatever had been the merits of the Teeswater cattle, it is certain Mr. Colling greatly improved them; and though it has been asserted that his success was the result of chance, arising from the possession of an animal, with the merits of which he was at one period unacquainted, the writer of this article is of opinion that Mr. Colling's success resulted from a deliberate and well-considered plan. He found the Teeswater, like all other extravagantly large cattle, frequently of loose make and disproportion. He was sensible, also, of the difficulty of breeding, with anything like certainty, *large good* animals; and though he has declined on all occasions to throw any light on his views and proceedings, the writer thinks he can detect, in the very outset, and through the progress of his practice, a resolution to reduce the size of this breed, and at the same time, and by that means, to improve its form. This he is supposed to have effected, in the first instance, through the medium of a bull, called *Hubback*, an animal respecting

which there has been much controversy, principally touching the purity of his blood, a question now of little importance, because it is admitted on all hands that Mr. Colling adopted another cross, which prevails in a majority of superior short-horns of the present day. It may, notwithstanding, be matter of interest to state a few particulars respecting this bull.

Without entering on an inquiry by what circumstances Hubback's title to be considered of pure blood is supported or weakened, it may suffice to observe that it appears probable he possessed on one side the imported blood. The possessor of his dam was a person in indigent circumstances, and grazed his cow in the high-ways. When afterwards she was removed to good land, near Darlington, she became so fat that she did not again breed; and her son, having the same feeding propensity in a high degree, was useful as a bull during a very short period. The quality of his flesh, hide, and hair are supposed to have been seldom equalled; and as he was smaller than the Teeswater cattle, he was eminently calculated to forward Mr. Colling's views. There are no superior short-horns which do not claim descent nearly, or remotely, from Hubback.\*

After the use of this bull, Mr. Charles Colling proceeded with success to produce superior animals; and the number of bulls he disposed of by letting was highly encouraging. But the circumstance which brought the short-horns into most extensive notice was the production of the Durham Ox, an animal which speaks volumes in favor of this blood. The ox was the produce of a cow which had been put to *Favorite*. At five years old, the Durham ox was sold to Mr. Bulmer, of Hamby, near Bedale, for public exhibition, for £140 in February, 1801. He was at that time computed to weigh 168

\*This is true, because Hubback was the sire of the dam of Mr. Charles Colling's bull, Foljambe, who was the grandsire of *Favorite*; and there has not been for many years any superior short-horn not descended from *Favorite*. Mr. Charles Colling is said to have considered that the bull, Foljambe, was the one who did his stock the greatest good; and this is not improbable, as Foljambe was the sire both of the sire and dam of *Favorite*. Hubback, however, must have been a remarkably good animal, and considering the short time which he was used by Colling, proved himself a first-rate stock-getter.

The following account of Hubback we had from Mr. Waistell, of Althill, who, although his name does not appear conspicuously in the Short-Horned Herd Book, deserves much credit for his discrimination here. He used to admire this bull as he rode by the meadow in which he grazed; and at last attempted to purchase him. The price asked, £8 seemed much, and the bargain was not struck. Still he lounged for the beast; and happening to meet Mr. Robert Colling near the place, asked his opinion of the animal. Mr. Colling acknowledged that there were good points about him; but his manner induced Mr. Waistell to suspect that Mr. Colling thought more highly of the bull than his language expressed, and he hastened the next morning, concluded the bargain, and paid the money. He had scarcely done so before Mr. R. Colling arrived for the same purpose, and as the two farmers rode home together, they agreed that it should be a joint speculation.

Some months passed by, and either Mr. Waistell's admiration of the bull cooled, or his partner did not express himself very warmly about the excellences of the animal, and Messrs. Waistell and R. Colling transferred Hubback to Mr. C. Colling, who, with the quick eye of an experienced breeder, saw the value of the beast. Mr. Waistell expressed to us (October, 1832) his regret (natural enough) at having been induced to part with him, and his extreme disappointment that when Hubback was so sold, Mr. Charles Colling confined him to his own stock, and would not let him serve even one of Mr. Waistell's cows.—*Youatt*.

stones, of 14 lb., (2352 lbs.), his live weight being 216 stones, (3024 lbs.) and this extraordinary weight did not arise from his superior size, but from the excessive ripeness of his points. Mr. Bulmer travelled with him five weeks, and then sold him and his carriage, at Rotherham, to Mr. John Day, on the 14th May, 1801, for £250. On the 14th of May, Mr. Day could have sold him for £525. On the 13th of June, £1000. On the 8th of July, for £2000.

Mr. Day travelled with him nearly six years, through England and Scotland, till at Oxford, on the 19th February, 1807, the ox dislocated his hip-bone, and continued in that state till the 15th April, when he was obliged to be slaughtered, and, notwithstanding he must have lost considerably in weight, during these eight weeks of illness, his carcass weighed—Four quarters, 165 stones 12 lbs. (2322 lbs.); tallow, 11 stones 2 lbs. 156 (lbs.); hide, 10 stones 2 lbs. (142 lbs.); total 2620 lbs.

This was his weight at eleven years old, under all the disadvantages of travelling in a jolting carriage, and eight weeks of painful illness. Had he been kept quietly at Ketton, and fed till seven years old, there is little doubt he would have weighed more than he did at ten years old, at which age his live weight was two hundred and seventy stones, (3780 lbs.) from which, if fifty be taken for offal, it leaves the weight of the carcass two hundred and twenty stones, (3080 lbs.)

It is a well-ascertained fact, that, during his career as a breeder, Mr. Colling tried several experiments in crossing, and the breeds to which he resorted on these occasions being very considerably smaller than the short-horns, this circumstance tends to corroborate the writer's opinion that he considered it desirable to reduce their size. The cross with the Kyloe led to no results worthy eumeration, but that with the *polled Galloway* must not be passed over without comment. Before stating the circumstances attending this experiment, it may be proper to observe that no breed of cattle promised so successful a cross with the short-horns as the *Galloway*. They were calculated, by their deep massive frames and short legs, to bring the short-horns nearer the ground, and to dispose their weight in a more compact manner: their hardy habits would be essentially useful, and the quality of their flesh and hair were such as to render the experiment still more safe, and they could be obtained of a red color; even without the sanction of a successful experiment, they were admirably adapted to cross with the short-horn, standing frequently too high from the ground, not very well ribbed home, and often of loose, disjointed frames.

To this breed Mr. Colling resolved to resort; and though at the time when he did so, the event was regarded with some degree of ridicule by the pure-blood advocates, and comments passed which would have deterred ordinary men from the exercise of their judgment, Mr. Colling persisted.

Mr. Colling's short-horned bull *Bolingbroke* was put to a beautiful red *polled Galloway* cow,

and the produce, a bull-calf, was, in due time, put to *Johanna*, a pure short-horn—she also produced a bull-calf. This grandson of *Bolingbroke* was the sire of the cow, *Lady*, by another pure short-horn dam, and from *Lady* has sprung the highly valuable family of improved short-horns, termed, in reproach, the *alloy*. How far the alloy was derogatory, let facts testify.\*

Mr. Colling was favored by circumstances in his object, which was to take one cross, and then breed back to the short-horn—the only course in which crossing can be successfully adopted. To breed from the produce of a cross *directly among themselves* will lead to results believed conclusive against crossing; but to take one cross, and then return and adhere to one breed, will, in a few generations, stamp a variety with sufficient certainty.

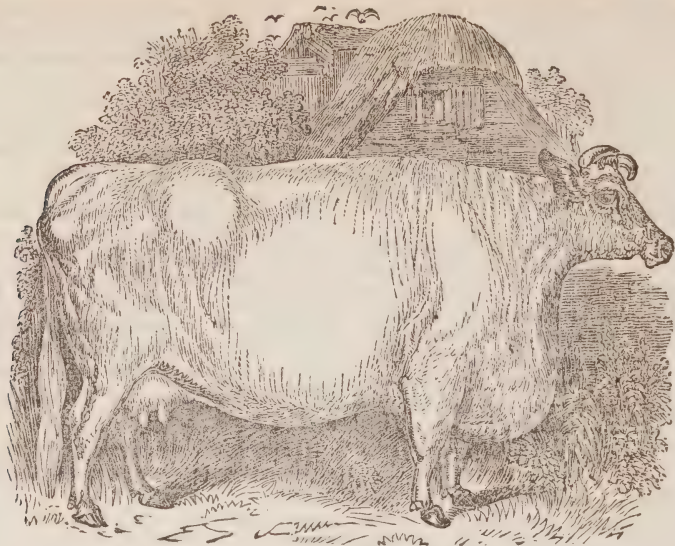
It will probably be admitted that the prejudice against this cross was at the highest at the time of Mr. Charles Colling's sale. The blood had then been little, *if at all*, introduced to other stocks, and it was manifestly the interest, whatever might be the inclination, of the many breeders who had it not, to assume high ground for the pure blood, and to depreciate the alloy. Under these untoward circumstances for the alloy, what said public opinion, unequivocally certified by the stroke of the auctioneer's hammer? *Lady*, at fourteen years old, sold for two hundred and six guineas. *Countess*, her daughter, nine years old, for four hundred guineas. *Laura*, another daughter, four years old, for two hundred and ten guineas. *Major* and *George*, two of her sons, the former three years old, the latter a calf, for two hundred guineas, and one hundred and thirty; besides a number of others, more remotely descended from *Lady*, which all sold at high prices. *Lady* and her descendants sold for a larger sum than any other family obtained.

It appears that seventeen cows were sold for £2802 9s.; eleven bulls, £2361 9s.; seven bull-calves, £687 15s.; seven heifers, £942 18s.; five heifer calves, £231 6s. In all forty-seven were sold, for £7115 17s.

Mr. Charge of Newton, near Darlington, and Mr. Mason of Chilton, in the county of Durham, were only second to Mr. Charles Colling in his interesting and useful pursuit. Mr. Mason started early with animals derived, it is believed, from Mr. Colling, in the very commencement of his career; and Mr. Charge, who had long possessed a most valuable stock of Teeswater cattle, had at an early period crossed them with Mr. Colling's best bulls, and was one of the spirited purchasers of *Comet*, at a thousand guineas. Mr. Mason's successful sale sufficiently stamps the value of his stock at that period, 1829.

\*The dam of *Lady* was *Phoenix*, also the dam of the bull *Favorite*; and as the grandson of *Bolingbroke* is not known to have been the sire of any other remarkably good animal, it is most probable that the unquestionable merit of *Lady* and her descendants is to be attributed more to her dam than to her sire.—*Youatt*.





THE REV. H. BERRY'S COW.

It would be unfair to omit mention of a veteran breeder, to whom the advocates for the preservation of pedigree are indebted for the "Short-horn Herd Book"—Mr. George Coates. He is now one of the oldest authorities on the subject, and was once the possessor of a very superior race of short-horns, though somewhat coarse. Portraits have been preserved of some very good animals bred by him; and he had the satisfaction to dispose of his bull *Patriot* for 500 guineas.

Mr. Coates fell into an error, but too common, and generally equally fatal: he fancied his own stock the best, and disdained to cross them with Mr. Colling's; which, as others afterwards proved, would have been a most judicious proceeding. The consequence was, Mr. Colling's sale having settled the public judgment and taste, Mr. Coates's stock fell into disrepute. If an apology be requisite for this statement of an undeniable fact, it will be found in the utility of holding up such an example as a caution to those who may be in danger of falling into a similar error.

It is considered that the specimens already appealed to, and the fine animals whose portraits accompany this account, will render superfluous any attempt more particularly to describe the short-horns. Of course they will be found to vary greatly; but sufficient may be collected from what is presented to the reader, to inform him as to the character of this superior breed of cattle. The next object, then, will be to show their capabilities to make a return for food consumed, and the unparalleled early period at which such return may be made. Indeed, *early maturity* is the grand and elevating characteristic of the short-horns, and their capacity to continue growing, and at the same time attaining an unexampled ripeness of condition at an early age, has excited the wonder, and obtained the approbation, of all not blinded by prejudice. [Our author then gives a long list of cases illustrating early maturity and extraordinary fatness.]

A steer, bred by Col. Cook, of Doncaster, fed on potatoes and straw, was slaughtered when two years and twenty-two days old, his four quarters weighed 72 stones, (1008 lbs.)

Mr. John Rennie (of Phantassie,) fed, in 1823, a steer, from eighteen to twenty months old; the four quarters of which weighed 945 lbs.

The same gentleman fed a steer, aged two years four months, whose four quarters weighed 1231 lbs.; also a steer, aged three years six months, whose four quarters weighed 1369 lbs.; tallow, 241 lbs.

Should the foregoing statement be considered extended, it will, at least, be admitted, that its ample detail establishes the credit of the short-horns as an invaluable breed to the grazier.

In the commencement of this account, however, it was stated that they possess a combination of qualities, considered incompatible in other breeds, viz: the disposition to feed rapidly, in union with dairy qualifications.

There is a very general impression that animals disposed to fatten rapidly seldom give much milk. It is true, that every perfection in cattle—whether it be one of form, of quality of flesh, of disposition to fatten, or to yield milk—can be promoted and retained solely by the breeder's devoted attention to his particular object; and if one object be allowed a paramount importance in the breeder's practice, other objects will suffer, in proportion as they are neglected.

The carcass of the short-horns has ever been so surprising, and so justly valued, that many persons have allowed that completely to occupy their attention, and the dairy has been disregarded. In such a state of things, every advance towards one point has been to recede from another; because what tends to enhance a particular quality, will also enhance a defect, provided such defect was of previous existence.

The objections which exist among breeders, for various and some cogent reasons, against



LORD ALTHORP'S COW.

crossing with the stocks of each other, unavoidably lead to the practice of breeding in and in ; which, in cases of any original deficiency of the milking property, must unquestionably go on to render the deficiency greater. Bad milking, in a breed of animals which were ever distinguished as good milkers, is not a necessary consequence of improvement in the animal in other respects, but a consequence of the *manner* in which such improvement is pursued. Short-horns, inferior to none for the grazier, may always be selected and bred with the most valuable dairy properties. There are many instances of the highest bred short-horns giving upwards of four gallons of milk night and morning ; and attention only is requisite, on the part of the breeder, to perpetuate this quality to any desirable extent. A moderately good milker will be found to yield as much *butter* in the week as one giving an enormous quantity ; the milk being unquestionably of very superior quality ; and, indeed, it should be the case, that the animal economy, which leads to an excessive secretion of flesh and fat, should also be productive of other rich secretions.

Wherever the improved short-horns have been crossed with other cattle, their superiority is equally manifest, in respect of dairy qualifications, as in every other.

An opinion generally prevails that the short-horns are unfitted for work ; and in some respects it is admitted they are so : but the correct reason has not been assigned, and the question may fairly come briefly under notice. They are willing and able to work, but surely cattle which, as the preceding account proves, will go as profitably to the butcher at two years old as any other breed at three, and as many even at four, ought never to be placed in the yoke. No beast, in the present advanced state of breeding, ought

to be put upon a system which arose out of the necessity of obtaining compensation by work for the loss attending a tardy maturity. But where it may be convenient, the short-horns, particularly the bulls, work admirably, as their great docility promises : And as good bulls are apt to become useless, from acquiring too much flesh in a state of confinement, moderate work might, in most cases, prove beneficial.

The specimens which accompany this account will render little comment necessary on their form. With deference, however, it is submitted to the breeders of short-horns, that they should avoid breeding from too close affinities, and, while they steer clear of coarseness, should require a sufficiency of *masculine* character in their males. This is a point in which many short-horns are rather defective, and it is one of infinite importance. The length of the carcass should be medium, as well as that of the legs, and a hardier animal, with equal size and on a more profitable scale, will be produced. The facilities for making this improvement are sufficiently numerous, the short-horns being now more generally diffused. That wider diffusion also multiplies the means of selecting for milk ; a quality which should not be lost sight of ; for it is the *combination* of perfections which has conferred, and will perpetuate, the superiority of this breed of cattle.

The colors of the short-horns are red or white, or a mixture of the two, combining in endless variety, and producing, very frequently, most brilliant effect. The white, it is very probable, they obtained from an early cross with the wild breed ; and whenever this color shows itself, it is accompanied, more or less, with a red tinge on the extremity of the ear ; a distinctive character, also, of the wild cattle. No *pure short-horns* are found of any colors but those above named.



## Editorial, &c.

G. BUCKLAND, ESQ., EDITOR.

H. THOMSON, ESQ., ASSISTANT EDITOR.

### HINTS FOR THE MONTH.

The early part of September, as every farmer knows, is the season specially devoted in Upper Canada to the sowing of fall wheat. Experience has proved that wheat sown either during the last days of August, or from the 1st to the 15th of September, stands a better chance, in an average of seasons, of escaping from winter killing, rust, &c., and of producing a better crop, in our climate, than that sown at a later period. In certain seasons wheat has succeeded equally well sown from the 15th to the 25th of September, but after the last mentioned date, the operation becomes a hazardous one, and all observation goes to show that the earlier mentioned date is the safer. All practical farmers are so well acquainted with the usual modes of putting in this grain, that to enter minutely into details would be superfluous. We may, however, give a few practical hints for the guidance of the inexperienced, of whom there is always a greater or less number conducting farming operations in this country.

We will suppose that the fallow has already received the final seed furrow, or that it is prepared, by having been thoroughly ploughed and cultivated to a good depth, during summer, for that operation. In the latter case, on clays or strong loams, and if undrained, as of course, all land with very trifling exceptions still is in Canada, the next required process is to turn up the soil, with a moderately light furrow, in ridges of not more than three or four yards in breadth, tolerably well rounded in the centre, and with the open furrows between the ridges cleanly cut out. The plough should be so held that each furrow will fall somewhat upon its edge, leaving the surface of the ridge well ribbed, so that the wheat may fall into the seams, and come up in drills, somewhat as if sown by a grain drill. This is of course in case the latter named implement is not intended to be used, in which case the nicety of the ribbing is not of consequence. On light or sandy soils the ridges may be of a

greater breadth than that above named, and on thorough drained land, where such improvement has been effected, the ridging may be dispensed with altogether, and the whole surface ploughed flat.

The next matter of importance, although it should of course have been attended to before the moment at which it is required for actual use, is the selection of the seed. None but the purest and of the best variety and quality should be used. Amongst the varieties in most popular use at present, we may mention the Hutchison, the Blue-stem, Soule's, the Mediterranean, Whiteflint, and a Red Chaff, white wheat, of which we do not recollect the precise designation. The two first named are productive, ripen in good time, yield a plump berry, and weigh well in the half bushel, but are not favorites with some of the millers as to their grinding qualities. Soule's is a favorite variety with those who have tried it, early ripening and productive. The "Mediterranean" is a red wheat, hardy, and may be recommended for the poorer class of lands. The "Whiteflint" is a good variety, and of excellent flouring qualities, but requires to be sown in good time to avoid rust. The "Red Chaff" has taken several of the large prizes for 25 bushels at the Provincial Shows, and generally produces a good sample.

If the seed is perfectly pure and free from smut, it may be sown in its natural condition, without any preparation. If otherwise, the seed should first be thoroughly cleaned and sifted, and then, if smutty, treated with a dilution of sulphuric acid, blue stone, arsenic, urine, common ley or other material of the sort. Such operations should be carefully performed, lest the vitality of the grain be destroyed. A common and efficacious preparation is to soak the seed in strong brine made from common salt for 12 or 24 hours, and then after draining, dry it well in plaster of Paris.

Everything being prepared, the wheat may be sown at the rate of one to one and a half bushels per acre on new or fresh land, and one and a half to two bushels, on older fields. That is, if sown broadcast by hand. If sown by the grain drill, which is every year coming into

more extensive use, and always with improved results, a less quantity will suffice. If the drill be used, the land is first smoothly harrowed, and if the seed does not cover well, it may receive a slight harrowing, lengthwise of the drill, afterwards. If the seed be sown by hand, it should be cast directly upon the ribbed surface, without previous harrowing; that is, if in any tolerable condition. If it should be very rough it may be broken a little with the harrow. After sowing broadcast, the field should be harrowed till the seed is well covered. Then let the open furrows be well cleaned out with the plough, cross drains made with the spade and shovel, wherever necessary, to carry off all the surface water, and then the farmer may turn out all the stray cattle, close up the fences, and wait the result at the next harvest, with the satisfaction of having done his duty towards securing a crop; only let him pay attention during fall and spring to his drains and keep them in proper working order.

With the sowing of fall wheat concluded, the farmer's summer campaign may be said to be over. He has now a little leisure to look about him, and occasionally take a day or two of recreation—go to the Fair, &c. The work usually to be attended to in the latter part of the month, besides an occasional day with the thrashing machine, consists in taking up the potatoes, harvesting Indian corn, &c., and other operations of general improvement. In the coming month, fall ploughing and a variety of other occupations will require attention.

#### UNITED STATES AND CANADIAN FLOUR.

We take the following remarks on the quality of American Flour sent to the European Market, from a late number of the *Belfast Mercantile Journal*. We regret to have to state that we know from the most reliable sources, that the complaints are two well founded, whether as regards United States or Canadian Flour. Complaints have also been made for a length of time in the Lower Provinces of some brands of Upper Canada Flour sent there. It was not only very frequently sour, but disgracefully and systematically short in the weight. And as a

proof that the fraud in weight was intentional, the tare of the barrel was sometimes found marked several pounds less than the real weight, so as to make the weight of the flour appear correct, and rendering the detection of the fraud impossible, except by emptying and weighing the barrel. Such dishonesty not only renders those who are guilty of it liable to severe punishment by law, but is of the most discreditable character, and will tend, if persisted in by any of the millers in the Province, seriously to damage the character of the whole country in foreign markets. However, we trust the few millers, who have either by accident or designedly fallen into such a mistake, if any of them are still in the business, will be deterred either by good principle or by fear of exposure and unpleasant consequences from repeating it. The question of the souring of the flour is one calling for the serious attention of the Farmer, as well as that of the Miller. A much greater proportion of exported Canadian Flour has soured within the last few years than used formerly to be the case. The circumstance has been on some occasions attributed, and no doubt correctly, to the fact of spring wheat being used, and flour from such wheat is now generally admitted to be unfit for exportation. But flour has also soured largely when spring wheat was not used, and hence it has been surmised by some manufacturers, that particular varieties of winter wheat,—one of which has been considered to be the Hutchinson Wheat—bore a resemblance in this respect, viz: liability to sour, to Spring Wheat. If this should prove to be the case, it will behove the farmers to select their seed wheat with a view not only to productiveness and early ripening, but also to manufacturing qualities. The extract is as follows:

“We are sorry to be obliged to caution our American friends against continuing to send over flour to these kingdoms of inferior quality to that indicated by the brand. We know not where the fault lies, but certain we are, that more than half that is imported to these kingdoms under the brand of No. 1, superfine, is mere rubbish, and discreditable to the character of American millers. Previous to the introduction of “free trade,” we recollect that Ohio and Western Canal flour bore a very high character, and justly so, but we have perceived since then a gradual deterioration in the quality, to such an extent latterly as to call



loudly for interference. An immense proportion of the flour lying almost unsaleable in Liverpool is of this description, and the continued loss to our merchants has been so great in consequence that the result will ultimately be a transference of the flour to some of our continental neighbours. French flour decidedly carries off the palm as to quality, and a good harvest or two would place that nation in such a position as to supply us more readily, and on better terms, with a superior article of flour. We would earnestly urge upon such of our readers as may be interested in this matter, and particularly would we address ourselves to our American readers, the vital necessity for their adopting immediate steps to have either an efficient and faithful class of "inspectors" appointed, or to do away with the branding of the flour altogether, and let the purchaser judge for himself. Let the miller's name and a particular initial, to be adopted by each miller, be branded on the barrels, as a matter of course, and indeed we cannot see how trade can be conducted properly or creditably on any other system."

#### LARGE DAIRIES IN DEREHAM, OXFORD COUNTY.

We take the following notice of Mr. Ranney's large cheese dairy, in the township of Dereham, Oxford, from a late number of the *Toronto Leader*. Mr. Ranney having entered into the business of cheese making, so far as we are aware, more extensively than any other person in Canada, and having several times been a successful exhibitor at our Provincial Shows, where many of our readers have seen the gigantic specimens of his manufacture exhibited, we insert this notice of his enterprise with pleasure:—

"On a recent visit to the County of Oxford, the writer was surprised at the extent and completeness of the dairies in this Township. The largest is that of Mr. Ranney, a settler of about 20 years. His farm is 550 acres, and he keeps 102 cows at the present time. They are all of the common breeds; Mr. Ranney looking not to breeds, but to the quality and quantity of the milk, which makes all the difference between success and failure.—Mr. Ranney last year made 17½ tons of cheese from 95 cows. There is one cheese on the premises, intended for exhibition in London, that weighs no less than 1200 lbs. The establishment has been twelve years in growing to its present size; and this year it will turn out upwards of 20 tons of cheese, a quantity that will yield, at the ruling prices, £1,250. Nearly all the farm of 550 acres is required for the purposes of the dairy. The machinery required is not expensive; but the cost of keeping up the establishment is considerable. Mr. Ranney has what is called a grinder for preparing the curd for the press; which is the last operation

in cheese making, except salting. Previous to the invention of the grinder a chopper was used, and by this clumsy instrument, it took an hour to perform what is now done in five minutes. Mrs. Ranney superintends with great care and success the entire establishment. She is a woman of great intelligence, and a school teacher was the first in the township who drew any money granted by the Government for education. Mr. Harris has also a large dairy establishment; but not having an opportunity of seeing it, the writer cannot describe it.

#### PROGRAMME

OF THE ANNUAL EXHIBITION OF THE AGRICULTURAL ASSOCIATION OF UPPER CANADA, TO BE HELD AT LONDON, SEPTEMBER 26TH TO 29TH, 1854.

Monday and Tuesday, 25th and 26th September, will be devoted to the making of Entries, and of receiving and arranging articles for Exhibition.

Entries will be taken up to Tuesday evening. Articles entered on Wednesday morning will be subjected to a charge of 5s. each;—the books will be finally closed at 9 o'clock, A.M.

The Judges will meet at the Secretary's office on the ground, on Wednesday morning, at 9 o'clock, to arrange for entering upon their duties. *Members only* will be admitted to the Show grounds on Wednesday afternoon, at 2 o'clock.

The public will be admitted on Thursday and Friday, after 8 o'clock, upon payment of 7½ each admission.

Public meetings will be held on Wednesday and Thursday evenings, for hearing addresses and discourses on Agricultural subjects.

The President's Address will be delivered on Friday, at noon:—afterwards the Premiums will be officially declared, and paid.

The managers of County Agricultural Societies are earnestly requested to forward the names of such persons as they may appoint as *Directors and Judges*, to the Secretary of the Board of Agriculture, without delay. According to the Statute, the members of the Board of Agriculture, and the Presidents and Vice-Presidents of County Societies, or any two members who may be appointed in their stead, constitute the Directors of the Agricultural Association;—who will meet in the Committee Room on the Show Grounds, on Friday, at 10 A.M., for the transaction of business.

The prospect of a large and successful Exhibition is most cheering, and the Local Committee at London are doing every thing in their power

to complete and carry out the arrangements in the most satisfactory manner; and the London Exhibition may reasonably be expected to be a fair exposition of the productions and resources of the great and fertile West.

The prizes offered on this occasion amount in the aggregate to upwards of EIGHT THOUSAND DOLLARS;—a proof of the progressive advancement of the Society. Printed Prize Lists, containing regulations, &c., may be obtained gratis, by applying to the Secretary of the Board of Agriculture, Toronto; J. B. Strathy, Esq., Secretary of the Local Committee, London; or the Secretaries of County Agricultural Societies.

#### THE ANNUAL EXHIBITION OF THE AGRICULTURAL ASSOCIATION OF LOWER CANADA,

Will take place at Quebec, on the 12th, 13th, 14th and 15th of September. As the event draws near we are glad to hear that the exhibition promises to be a good one, and trust that many persons from this section of the Province will pay Quebec a visit; and as the shows of both sections of the Province are open to general competition, it is much to be desired that Lower Canada should be represented at our approaching Show at London, and Upper Canada at Quebec. We regret that we did not receive the information that the period for receiving entries for the Lower Canada Show had been extended to the 1st of September, in time for notice in our last issue.

#### THE RESULTS OF HARVEST, AND PROSPECT FOR PRICES.

At the date of our last issue, when the grain harvest was at its height, the general impression appeared to be that the wheat crop in Upper Canada would be this year unusually productive, and the probable surplus for exportation was estimated by some at as great an amount as 12,000,000 bushels. Now, however, that harvest has concluded, and a nearer estimate may be made of the amount of the crop, there appear strong grounds for doubting whether it will be as great as was anticipated. Extensive complaints are made of the effects of winter killing and rust, while spring crops appear to have suffered from drought. In the United States, the wheat crop is probably an average one, but the damage to the spring crops from the long continued drought (which has been the greatest experienced for many years) has been very great. Indian corn especially, on which so much depends, both as an auxiliary to the supply of breadstuffs, and for pork

and cattle feeding, will be in some districts nearly a total failure, and the crop on the whole, it is feared, will be far below an average. In Great Britain, where harvest at the last reports had fully commenced, there is every reason to believe that the crop will be an abundant one, fully an average, if not above, and the weather being fine, there seemed a good prospect of its being well secured. The general accounts from the Continent of Europe are also favorable. Meanwhile all the depots or shipping ports on this side of the Atlantic are exhausted of Stocks to an unprecedented degree. The wheat and flour received are scarcely sufficient to supply the consumptive demand. The knowledge of this fact in England, notwithstanding the favorable accounts from the seat of war, and the prospect of an abundant harvest, tends to keep prices advancing—as, should the harvest unfortunately prove wet, there would be an extensive importation of wheat required before British wheat could come into consumption. At the time we write, August 26th, the latest quotations from England were: for Canada white wheat 9s. 6d. a 10s., sterling, per 70 lbs.; red do. 8s. 9d. a 9s. 3d. No. 1 superfine flour was 32s. a 32s. 6d. per brl.; extra do. 33s. 6d. a 34s. 6d. In New York on the 25th, Canadian flour was sold at \$9 25 in bond, New York State being \$9 50 a \$9 75, and Genesee \$10 37½ a \$11 50; while wheat was bringing \$2 a \$2 25. In our market at this date flour is worth 37s. 6d. a 38s. free on board, and wheat 7s. a 8d. Whether any material advance be made on these prices during the next two or three months will depend upon further advices from Europe. At any rate prices are not likely to be much lower than at present for some time to come, owing to the shortness of stocks at the shipping ports. With the abundant crops of Europe, if the harvest turns out favorable, prices may perhaps recede in England in winter, though no accurate opinion can be formed at present. It seems at present not improbable that prices may decline somewhat on this side of the Atlantic, when an accumulation of stocks takes place. The reciprocity treaty coming into operation will of course tend to help them up, but the farmer cannot fail of securing high rates by thrashing and delivering in early autumn. If he chooses to speculate upon high prices in winter and spring, he can of course do so, but he must take the risk of a possible reduction.

#### AGENCY FOR IMPORTING SEEDS, IMPLEMENTS, &c.

We have much pleasure in calling the attention of our readers to Mr. Brown's advertisement in the present number. From the known respectability and qualifications of the firm of Messrs. Cockburn & Brown, we have no doubt that whatever agency they undertake for purchasing and shipping seeds, implements, &c., from Europe to this country, will be done with care and judgment, so as to give all reasonable satisfaction.



## Literary and Miscellaneous.

### EDUCATION ANALYSED.

BY MRS. M. F. H. THOMAS.

#### CHAPTER I.

This habit of abstraction, or inattention, is sometimes carried so far, that we see men, of naturally sound and even superior minds so engrossed by their business, by a mere mode of money making, as to be awake only to what concerns that and the "Almighty dollar." Truly, "having eyes, they see not; and having ears, they hear not." In the emphatic language of Scripture—"The God of *this* world, (is not wealth a god? Aye a very Moloch, reeking with the sacrifice of both souls and bodies;) has blinded their eyes." There are other kinds of dreamers—daytime somnambulists, but I instance this class, because they are among us every where; so much so, that they may even be ourselves, gentle reader. But never mind. No one will think of putting on the coat; but will be sure to award it to somebody else; we have all such a happy method of seeing the application of unpalatable truths to others; never dreaming, that while we are thinking the coat a "snug fit" for our neighbor, *he* may be thinking the same of us.

But to proceed. A thorough knowledge of our business, and interest therein; be it whatever it may, is requisite to success. But let us be careful that we do not confound the *means*, with the *end* of existence. Our subsistence here, should not be the *object* of our life, by any means. That were folly in the extreme. Riches are but the *means* of prolonging existence; and affording opportunities for developing our mental nature—for perfecting virtue; and furthering on our life mission. *We* do not live, like the ant, to hoard and die. This state is merely the threshold of existence, and if we waste all our energies in providing for its wants, we shall be, truly, like the "foolish virgins" of the Holy Scriptures, our journey but commenced, with our oil wasted, and our lamps gone out. Besides, if we fit ourselves only for our present occupation, and position, we can never hope to rise above it. Should the influence of the wealth we acquire; or other circumstances, obtain for us admission into a higher and broader field of labor—and in this free blessed country there are none but may indulge such a hope—we shall be unfitted for its duties and requirements, making but a sorry figure, at best; and unhappy and out of place, render ourselves objects of contempt and ridicule, rather than of admiration and reverence. And last, but not least, by any means, be deprived of the inestimable privilege of *doing good*—of blessing mankind, and finding stars in our crown of rejoicing. Every young man

and women, in this favored land, should set a high stake for their future, however humble their present occupation; and fit themselves to *shine*, in any position, in which they may hereafter be placed. Elihu Barrett was a blacksmith—Benjamin Franklin a poor printer's apprentice; but while pursuing their humble callings, they found time to fit themselves for a broader usefulness—a higher destiny, and be it remembered, that whoever prepares himself for a higher sphere, than he at present occupies, will seldom fail of reaching it. I know that some think, that these self-made men, are peculiarly gifted by nature; but I have ever thought, that *industry and perseverance, are the better part of genius*. At any rate, if we cannot reach the height of the inspired poet or artist; we may at least, make the statesman or reformer—the guide and purifier of the tendencies of our times. Had Burritt and Franklin never aspired beyond a perfect mastery of their respective trades, there memories would be lost, with the vast masses of their contemporaries; leaving no visible trace upon subsequent life. Rising men and women are around us, in our daily paths. Men and women, whose motto is "Excelsior," and who, by preparing for a higher usefulness, rise gradually, step after step, on the ladder of fame, the blessing of our present, and promise of our future. The path they are treading is open to all. In the language of the noble, but eccentric Emerson—"If you would be seen—*shine*." Do not imagine that there is for you, but a single leaf in the great book of knowledge—a narrow corner in the universe of God. You are His child; and coheir with your brethern, of all knowledge, human and divine. You have a mind, however humble, capable of infinite expansion, and you know not, till you have spent a lifetime in its development, to what heights you may attain. Do not think, then, that any branch of knowledge concerns you not. You may yet find means of turning it to your benefit in future life; and if not, its acquirement will, at least, help to expand your minds.

Our next chapter will be devoted to a consideration of the different divisions of knowledge, and their respective benefits.

Brooklin, August 20th, 1854.

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 HOW TO MAKE GOOD TEA.—If men can be induced to build rain-water cisterns by recommending rain-water for tea, then some good may arise from tea-drinking. I have no doubt that rain water is far more healthy, and when properly filtrated, is as pure as the running spring. Then why is it not more used? In numerous places, a supply of water could be had from the roofs of farm-buildings, at one-half the expense that it is obtained at from deep wells. I hope every tea-drinker in the country will become perfectly convinced that good tea can only be made from rain-water, and then cisterns will become fashionable:

POETRY.

THE HAPPY FARMER.

BY MRS. L. H. SIGOURNEY.

Saw ye the farmer at his plough,  
As you were riding by?  
Or, wearied 'neath his noonday toil,  
When summer suns were high?  
And thought ye that his lot was hard?  
And did you thank your God,  
That you and yours were not condemned  
Thus like a slave to plod?

Come, see him at his harvest home,  
When garden, field and tree  
Conspire, with flowing stores to fill  
His barn and granary.  
His healthy children gaily sport  
Amid the new mown hay,  
Or proudly aid with vigorous arm,  
His task as best they may.

The dog partakes his master's joy,  
And guards the loaded wain,  
The feathery people clap their wings  
And lead their youngling train.  
Perchance the hoary grandsire's eye  
The glowing scene surveys,  
And breathes a blessing on his race,  
Or guides his evening praise.

The Harvest Giver is their friend—  
The Maker of the soil—  
And earth, the Mother, gives them bread,  
And cheers their patient toil.  
Come join them round their wintry hearth,  
Their heartfelt pleasure see,  
And you can better judge how blest  
The farmer's life may be.

RECIPES, &c.

**CERTAIN REMEDY FOR A FELON.**—Take Polkroot and roast it in the fire until done, then wash up all the soft part and make it into a poultice and apply to the place afflicted 3 or 4 times a day, as hot as can be borne, and it will perform a cure in forty-eight hours.

**CHOLERA.**—When cramps and sickness of the stomach occur, also diarrhoea, take 6 or 7 drops of oil of peppermint (not essence) and 15 drops of laudanum, in half a glass of cold water; and if not relieved in two hours repeat the dose.

**REMEDY FOR A COUGH.**—Syrup of Squills, Syrup of White Poppies, Syrup of Horehound and Clarified Honey.—Equal parts of each.

A tea spoon full of the mixture should be taken at night in a wine-glass full of warm water, and in the morning also, if the cough is very troublesome; but in ordinary cases it will probably be sufficient to take it at night.

**TO CLEAN HEAD AND CLOTHES BRUSHES.**—Put a table-spoonful of pearlash into a pint of boiling water. Having fastened a bit of sponge to the end of a stick, dip it into the solution, and wash the brush with it, carefully going in among the bristles. Next pour over it some clean hot water, and let it lie a little while. Then drain it, wipe it with a cloth, and dry it before the fire.

**TO PROTECT HORSES FROM FLIES.**—Take two or three handfuls of walnut leaves, upon which pour two or three quarts of cold water. Let it soak one night, and pour the whole next morning into a kettle, and boil for a quarter of an hour; when cold it is fit for use. Moisten a sponge with it, and before the horse gets out of the stable, let those parts which are most irritable, be smeared over with the liquor. Every "merciful man," who uses a horse during the hot weather, should promote his comfort by this simple measure.

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Hydraulic and Agricultural Engineering.

**MR. JOHN HENRY CHARNOCK**, Hydraulic and Agricultural Engineer, (a Member of the Royal Agricultural Society of England, and author of its Prize Report on the Farming of the West Riding of Yorkshire, as well as other papers on Drainage, &c., published in its Journal; and late an Assistant Commissioner under the English Drainage Acts.) begs to offer his Professional Services to the City and Town Authorities, and to the Agriculturists of Canada, and to solicit the honor of their patronage and support.

Having for several years past devoted special attention to that branch of Engineering which embraces more particularly works of Town Sewerage and Water supply, the Drainage, Irrigation and general Improvement of Land, the planning and erection of Sewerage and Drain-pipe works, Farm Buildings and Machinery, together with the laying out of Farms and Ornamental Grounds; Mr. Charnock ventures to think that such experience, coupled with a practical knowledge of the approved systems and appliances of the day, will enable him to render valuable and efficient services to those who may favor him with their commands.

Mr. C. is furnished with testimonials from numerous parties of known standing and repute, which he will be happy to submit to those who may contemplate employing him. And all communications addressed to him, CITY OF HAMILTON, CANADA WEST, will have prompt attention.

JOHN H. CHARNOCK.

OFFICE, JAMES'S STREET, HAMILTON.—At Mr. Simons' Land Agent, close to the St. George's Hotel.  
Hamilton, August, 1854.

DRAIN AND SEWER-PIPE MACHINE.

**MR. CHARNOCK** begs to intimate that he will exhibit his Patent Machine for Moulding all descriptions of Tiles, Pipes, Bricks, &c., in full operation at the Fall Exhibition of the Provincial Agricultural Association, to be held in London, on the 26th, 27th, 28th and 29th of the present Month.

By this Machine a Man and three Bops can mould from 5,000 to 10,000 feet of Pipe per day. Price, with five dies for Pipes, £50—half Cash and Note at 6 months for the remainder—its effective operation guaranteed by the Patentee. Orders addressed to the Patentee, Hamilton, C. W., will be promptly attended to.

JOHN H. CHARNOCK.

Hamilton, Sept., 1854.

NOTICE.

**MR. WILLIAM BROWN**, of the firm of Cockburn & Brown, Nurserymen, Seedsman and Florists, Montreal, being about to return to Europe, offers his services to Agricultural Societies, Farmers and others, for the purchase and shipment of Seed Grain, Stock, Implements, &c. Terms and particulars can be obtained by addressing Messrs. Cockburn & Brown, as above, at 40, Great St. James Street, or orders (in all cases accompanied by a Bill of Exchange for the probable amount of the purchase) may be sent direct to Mr. Wm. Brown, 1, Cumberland Street, Glasgow, Scotland.  
Montreal, August 15, 1854.



**SIR CHARLES NAPIER,**

(Imported Short Horn Durham Bull,)

THE PROPERTY OF MR. RALPH WADE, JR.,

NEAR COBBOURG, C. W.,

**W**ILL serve Cows this season, 1854; thorough bred Cows at Ten Pounds, others at Two Pounds Ten Shillings each P. P. Calved March, 1853, bred by J. M. Hopper, Esq., Middlesbro'-on-Tees, Yorkshire, England; got by Belleville, (6778), d. Polly, by Belleville (6778). g. d. Madeline, by Newham (4503), g. g. d. Ganymede, by Uptaker (5334), g. g. d. Garland, by Matchem (2281), g. g. g. d. by Fitz Remus (2025), g. g. g. g. d. by Cato (119), g. g. g. g. d. by Whitworth (695), g. g. g. g. g. d. bought of Mr. Mason, of Chilton.

**BELLEVILLE.**

(Vide Coate's Herd Book, Vol. 6, p. 18, No. 6778.)

*The property of Mr. John Mason Hopper, will serve Cows at Newham Grange, near Middlesbro'-on-Tees, at 12 Guineas each Cow.*

In the year 1846, Belleville (sire of Sir Charles Napier) won the first Prize in the first Class, at the meeting of R. A. Society of England, at Newcastle; the first Prize in the first Class, at the meeting of the Yorkshire Agricultural Society held at Wakefield; the first Prize in the first Class, of the Royal Irish Improvement Society, held at Limerick, and the Challenge Cup of 100 Guineas' value, as the best Animal in the Yard, with one Gold and two Silver Medals; also, the first Prize in the first Class, at the meeting of the Highland Society of Scotland, held at Inverness, and the Silver Medal for the Breeder; likewise in 1848, the first Premium at the Durham Agricultural Society's Show, held at Darlington; and in 1850, at the meeting of the Highland and Agricultural Society, held at Glasgow, he won the sweepstakes of 2 guineas each, with 25 added by the country, as the best bull of any age, open to England, Ireland, and Scotland, beating nineteen others.

**CHALLENGE.****\$1,000 to \$4,000 a Side!**

Or in Friendly Competition.

**I**MPORTED "YOUNG LION" Within one Month after his Sasonis over (due notice being given), is open to

**WALK OR TROT 5 MILES AND UPWARDS.**

Against any Stallion, Gelding or Mare, of his weight or more, in Canada or in the United States, imported or otherwise, and as so few Horses can be found to weigh with him, any Horse weighing within 250 lbs. of his weight will be allowed to compete.

—ALSO—

At the same time, he will be open to Trot his Mile in less than **FOUR MINUTES**, in or out of Harness.

—ALSO—

At the same time, he will be open to draw any weight from Two Tons and upwards, from 5 Miles to 100, and return unladen in the shortest space of time, against any Stallion, Gelding or Mare, of any class, size or weight, either in Canada or the United States, imported or otherwise.

—ALSO—

For Superiority of Action against any Horse of his Class wherever he can be found.

One Judge to be chosen from among the veterinaries of New York, one from Montreal and one from Toronto, whose services are to be paid for by the Winner.

The Trials to take place in the vicinity of Toronto; and all travelling expenses to be allowed to the Owner of any Horse that may compete coming from a distance.

**W. B. CREW.**

Toronto, May 27th, 1854.

6-6-m.

**ENGLISH CATTLE.**

**T**O AGRICULTURAL SOCIETIES and OTHERS requiring the best bred Cattle from England—comprising:

**PURE BLOOD HORSES, SHORT-HORNED CATTLE, NORTH DEVONS, HEREFORDS, AYRSHIRE and ALDERNEY COWS.**

Also: Pure Bred Southdown, Cotswold and Leicester Sheep.

Also: Suffolk, Essex and Berkshire Swine; imported on commission into any part of Canada and the United States, by Messrs. Thos. Betts & Brother, of Herts, England.

Cattle ordered previous to the 1st of September will be insured if desired.

Every information with regard to terms and shipment of Stock to America will be strictly attended to by applying to **W. EVANS, Esq.,** Secretary to the Board of Agriculture, Montreal, or to **J. M. MILLER,** 81 Maiden-Lane, New York City.

**THOS. BETTS & BROTHER,**  
Herts, England.

Toronto, August, 1854.

TO

**Agricultural Societies, Farmers, and Others!**

**O**N SALE BY PRIVATE TREATY, by the Agricultural Society of the Township of ORILLIA, County Simcoe, that celebrated **DEVON BULL**

**ROB ROY!**

Being now six years old, and having received the first prize awarded by the Agricultural Association of Upper Canada, at Niagara, 1850. He has also received the first prizes awarded to Bulls by the Oro, Medonte, and Orillia Agricultural Society. The length of time he has been in possession of the Society renders it necessary to effect a change, which is the only reason for parting with him. Pedigree can be given, and further particulars known, on application to the Secretary,—if by letter, post-paid.

**GEORGE TUDHOPE,**  
Secretary.

Orilla, July 22, 1854.

8-2m

THE

**CANADIAN AGRICULTURIST,**

**E**DITED by **G. BUCKLAND,** Secretary of the Board of Agriculture, assisted by **Mr. H. Thomson** and the Proprietor. It is published on the 1st of each month by the Proprietor, **William McDougall** at his Office, corner of Yonge and Adelaide Streets.

**TERMS.**

**SINGLE COPIES**—One Dollar per annum.

**CLUBS,** or Members of Agricultural Societies ordering 25 copies or upwards—*Half a Dollar each Copy.*

Subscriptions always *in advance*, and none taken but from the commencement of each year. The vols. for 1849-'50-'51-'52-'53, at 5s. each, bound.

**N. B.**—No advertisements inserted except those having an especial reference to agriculture. Matters, however, that possess a general interest to agriculturists, will receive an Editorial Notice upon a personal or written application.

THE  
CANADIAN AGRICULTURIST,

AND JOURNAL OF TRANSACTIONS

OF THE

BOARD OF AGRICULTURE, AGRICULTURAL ASSOCIATION, &c.

VOL. VI.

TORONTO, OCTOBER, 1854.

No. 10.

Agriculture, &c.

EXHIBITION OF THE HIGHLAND AND AGRICULTURAL SOCIETY OF SCOTLAND.

(Abridged from the Berwick Advertiser.)

The important biennial Show of the Highland and Agricultural Society has been held in Berwick during the first week in August.

The district in connection with the show was nominally the counties of Berwick, Roxburgh and Selkirk. The title of the society does not admit of any English county being included, and the important district of Northumberland, by which this borough is bounded on the south, therefore contributed its share to the show as one of the English counties only, the competition being open to exhibitors from all parts of the kingdom.

The agriculturists in the four counties therefore were the principal parties interested in the show, and they joined heartily in the amicable competition which has been the occasion for a display of agricultural wealth, of practical commercial knowledge, and of judicious management seldom surpassed at any gathering.

The Society awarded £1,500 in prizes exclusive of expenses incurred in the general arrangements, which cannot be estimated less than £1000 more. Of the sum awarded for premiums £416 were given to cattle in 19 premiums, comprising Short-horns, Polled Breeds, Ayrshire and Highland Breeds. To Horses for Agricultural purposes £168 was awarded in eight different premiums. £286 was awarded to Sheep in 18 different premiums. £54 was awarded to Swine in five premiums. 45 silver medals were awarded to Poultry, which comprised all the barn-door genus from the long-familiar to the more modern species of Cochin China and Dorkins. The second best in merit in this department were honored simply with a certificate of merit. £268 were awarded in 76 premiums to Implements and Machines. The entries for competition for these premiums amounted to 1,785 being nearly double the entries of the previous show here.

THE CATTLE SHOW.

The morning opened favorably, fair and a cool breeze, giving indication of an agreeable day.—The bustle of the occasion commenced with early day. Police officers were stationed at all the corners of the streets giving directions to parties in charge of stock how to proceed to the show-yard, and enforcing the observance of the regulations previously made. At five o'clock the leading and driving of stock commenced, and continued without bustle or confusion up to nearly half-past seven. At this time all had been admitted, and the arranging of the animals nearly completed. At the sound of a bugle the ground was cleared of all parties save the Judges, who proceeded to the examination of the stock and award of prizes. As the day advanced the railways disgorged their loads of human beings, and presently the streets became covered with strangers, who gave the town, notwithstanding the general closing of shops, a very animated appearance. The doors of the show-yard were opened at eleven, the admission charge being half-a-crown from that hour to twelve. During this time the ground was very well covered with visitors, and movement near the stock was only just convenient. At twelve the admission fee was lowered to a shilling, and immediately crowds of people poured in, and continued so to do throughout the remainder of the day. The number of ladies present was remarkable, and the fair sex contributed greatly to the brilliancy of the lively and animated scene. Finer weather—the light clouds shielding from the direct rays of the sun—could not have happened for this the chief day of the Show. Perhaps the most noticeable feature in the company next to that of the attendance of ladies was the large number of persons who are evidently engaged in the lower departments of agricultural labor.—The day must have been made a holiday, not only by the inhabitants of neighboring towns, but even by those who occupy the country, and the farm work must have been generally neglected for a very large district around. Near the auctioneer's room, Mr. Gourlay Steel, A.R.



T. A., of Edinburgh, had taken his station with a daguerreotype apparatus, and before the company was admitted, many of the chief features of the show had been sun-painted on his glass plates.—Mr. Steel is, we believe, employed by the Society to paint a picture 13 feet by 6, illustrative and commemorative of this Show, which will be afterwards engraved for general circulation.—Most of the leading members of the Society will be grouped in the picture, and the Mayor, in his chain of office, and Captain Mackenzie of the 42nd Highlanders, in full Highland costume, who were most prominent amid the company on each day of the show, will with other gentlemen locally connected, who took interest in the proceedings of this year, give the picture a thorough identification with this particular exhibition.

The number of entries for stock was 724.—We have no means at hand of comparison with the later shows of the Society, though we were assured on the ground that the present exhibition is not in any way inferior to those of late years. Indeed all persons with whom we conversed expressed the highest gratification at the success of the present show, and regarded it as in general of superior merit to any others of the Highland Society. As compared with the former show in this town, thirteen years ago, the advantage of the present is of course most distinctly marked; the numbers shown being now 1267 against 962. There were on Thursday about a hundred short-horns on the ground, and many of them were very superior animals. That belonging to Mr. Simson, Blainslie, and which gained the second prize of £15, was very much admired for the beautiful symmetry and true breeding which it displayed. It was, however, rather faulty in a point which is now considered of almost paramount importance, viz., a fine mellow touch.—This bull had already taken prizes at local shows, and was highly commended at the Lincoln meeting of the Royal Agricultural Society of England. The class of short-horn bulls as a whole was much admired, and the decision of the Judges was generally acquiesced in, the superiority of the prize animals being manifest. The poll breed were not numerously represented, which may be accounted for by the distance they require to be brought. The Ayrshires were considered very excellent specimens of dairy cattle; some of the cows exhibited most extraordinary milking qualities. The West Highland breed was very deficient in numbers, but those shown were considered so good as to receive the special approbation of the judges.

#### HORSES.

The horses were in very great number, and a high authority pronounced the opinion that while the old horses were not equal to former years, the younger animals were very much superior.

#### SHEEP.

The particular excellence of the show were the sheep, which were perhaps more numerous in proportion, than any other stock, and of general improved character. The Cheviots attracted very general observation for their marked im-

provement on former years. The Leicesters, although in general very good, and comprising many excellent specimens, exhibited no individuals of extraordinary merit. The Black-faced are also deserving special notice; nor should the Longwools, Southdowns, Romney March, and Dorsets, though in small numbers, be passed over, though the general high character of the exhibition forbids any details respecting them.

#### SWINE.

In the section of Boars of large breed some animals of extraordinary obesity and general merit were penned. The Cumberland Boar which obtained the first prize was a truly monstrous specimen of the porcine genus.

#### POULTRY

were inferior, and only a few specimens were worthy of a place in the show-yard.

#### THE EXHIBITION OF IMPLEMENTS AT WORK.

This was situated on Castle Hills farm, distant about a mile to the north-west of the town.—Here at 7 o'clock a.m., were to be found eleven ploughs harnessed to a similar number of pairs of horses. The soil was mellowed by the late rains, and neither too moist nor too dry. It was in lea, and a gentle rising ground. After the ploughs first placed had gone through sufficient work to test their capabilities, three or four others were brought forward, one of which drew considerable attention by the novelty of two rows of small digger-like wheels attached to its side for the purpose of turning up potatoes as the plough passed forward. The work performed by this plough was criticised rather freely by some farmers present, but we see that the judges, who watched its operation carefully, have thought the invention worthy of approval. The attendance of visitors, which fluctuated during the exhibition, never seemed to exceed 200 in number, and consisted generally of the agriculturists of our district. The depth to be ploughed was from 7½ to 8 inches, and the weight of the draught was particularly noticed by the judges. Considerable discussion took place amongst the general spectators as to the merits of the several ploughs, and the feeling among them seemed to be in favor of those which combined, with other qualities, simplicity of structure. A very admirable wheel plough was exhibited by Messrs. Howard, of Bedford, and it attracted greater notice than any other implement on the ground, so that up to the close of the trials it was kept in constant employment, and was attentively watched by many practical men, who seemed to take great interest in its performances, by which the prejudices of most on the ground in favor of the superiority of the Scotch plough were severely shaken. The only drawback from its complete approval arose from an apprehension that its machinery was not so simple, but that if disarranged or out of repair it would not be easily put right again. We should not omit to remark, that this plough is fitted with shifting moulds, so that it may be adapted to the land on which placed. Its draught, too, was but three to three and a half

feet, which was less than any other plough whose draught we heard of—some of them rising to five and five and a half. Messrs. Gibson, Newcastle, had a subsoiler on the ground constructed on the principle of the digger, but it clogged, and was a complete failure, owing, it was said, to the hurry with which it had been sent off, and the omission to attach scrapers.—The diggers exhibited did not embody any novelty of principle or so far surpass expectation as to justify lengthy observation. There were also Norwegian and drill harrows on the ground; and various grubbers and pulverizers, whose respective merits were recognized by the judges and need not be here specially distinguished.—About eleven o'clock the company began to thin, and gradually drew off to the show-yard, in which was the

#### EXHIBITION OF IMPLEMENTS.

There were 357 entries made under this department, but owing to circumstances not specified a considerable number of implements were not placed, or at least many numbers in the show-yard were blank. The implements were in much greater number than at the last show in Berwick, and of course were of vastly improved character; but so far as we could gather from the gentlemen on the ground acquainted with the later exhibitions of the Highland and Agricultural Society, the present exhibition is not quite equal to those of late years, and is also much inferior to the exhibitions at York. This is probably owing to the unlucky clashing of the Yorkshire Agricultural Society exhibition this week with the Berwick Show, and which our southern friends were not, we believe, very anxious to avoid. There was an especial deficiency in draining-pipes, tiles, and articles of that nature. The first row of implements on entering the yard consisted principally of ploughs, most of which had been tested in the field at Castle Hills. Next came Norwegian and other harrows, grubbers, pulverizers, &c., &c., many of them from the workshops of Mr. Crosskill, Messrs. Howard, and other eminent makers. For some of these we saw orders given on the field by local agriculturists, on the strength of recommendations by neighbors, and also from their favorable performance on the trial field. The class of turnip and straw cutters, and linseed breeders was fully represented; and haymaking machines, root washers, &c., which, although often exhibited at our agricultural shows, do not appear to make their way in this district, were here again in considerable numbers. There was also a large and varied assortment of drill sowing machines, many of which appeared to possess considerable merit as well as novelty. Stanley's, of Peterborough, Apparatus for Cooking Linseed, Hay, &c., which was exhibited by Mr. Thompson, of this town, attracted attention. Churns and Cheese Presses were in great variety. Bell's Improved Reaping Machine was on the ground, but of course the public had no opportunity of testing its merits on account of the crops not being forward enough for cutting.

We must not pass over the model of a Farm Stead, by Lockart Morton. This placed all the yards and premises of a farm under cover; and even a few of the corn stacks could be placed under roof, by means of a railway close to the feeding board of the thrashing machine. The model was calculated for a farm of 600 acres, and according to Mr. Morton's statement could be constructed for £1000. A very excellent Morticing Machine was exhibited by a manufacturer in York. Among a numerous exhibition of Sheep-Washing Machines, Mr. Wilson's, of Coldstream, seemed the simplest and most efficient. There were also several beautiful Iron Gates from Glasgow. Of course many other implements were well worthy of notice, but we have said sufficient to show the general nature of the exhibition.

#### THE DINNER

Was, as usual, numerously attended, the utmost harmony and good-feeling prevailing. In the absence of the President, from domestic affliction,—the Duke of Hamilton,—the chair was taken by the Earl of Dalkeith, M.P.

We give as much space as possible to lengthened extracts from the speeches, which were, as a whole, of a very interesting and encouraging character, indicating unmistakably the tendency of North British Agriculture to be rapidly onwards.

The Earl of Haddington was very happy in his remarks in proposing the health of the "Clergy," in connection with the health of the Chaplain of the Society,—the Rev. Dr. Grant, of Edinburgh, on whom the University of Oxford has recently conferred the honorary degree of Doctor in Civil Laws.—The Rev. gentleman replied as follows:—

DR. GRANT.—As having the honor to form the connecting link between the clergy and this great society, I beg to acknowledge with gratitude the toast that has now been given. The toast as explained by the noble Earl is a comprehensive one, and includes ministers of religion of all denominations. In particular it very properly includes my respected fathers and brethren of the English Church, within whose limits we are now met. Of them it may be there are some who would hardly have selected me as their representative, but it may in some measure disarm such if any there be, of their jealousy, when I say that for the Ecclesiastical institutions of England I entertain, and have ever entertained, the most heartfelt respect and the most hallowed reverence. (Cheers.) To all I would give the assurance that no word shall fall from my lips by which the feelings of the most sensitive may be wounded, or the views which any may entertain would seem to be compromised. (Renewed cheers.) My Lord, I hope I shall not appear to magnify unduly the order to which I belong,



when I say that this toast is a proper expression of your respect for our sacred character and calling, and I trust I may regard it as a pledge equally becoming in bodies of men as well as individuals to give, that all your schemes, albeit they may refer to matters of merely temporal interest, have been begun and will be carried on in the fear of God. The province of duty assigned to the clergy is not very different from that undertaken by this Society. We are charged with the care of the immortal interests of our fellow-men; but while alive as I hope, to the superior importance of our own high and holy vocation, our spirit is not so illiberal and contracted, or so unworthy of educated men, as to prevent us from appreciating the value of your patriotic labours. On the contrary, we acknowledge with gratitude your invaluable services, and we bid you all hail as fellow-labourers with us in the great and wide field of philanthropic exertions. (Cheers.) Of the manner in which the clergy have discharged their sacred trust it does not perhaps become me to speak, but we are willing that you should be our judges. The national character of a people, it has been well said, is moulded in the institutions under which they live. The churches in this land present to you the yeomen and the peasantry of England and Scotland, the tenant-farmer and the hardy tillers of the soil. They have long been under our charge, none know them better than you, and if you will find us men more upright, more industrious, more intelligent, more enterprising, take them all in all, more religious, more exemplary in all the duties of social and domestic life, more meek and uncomplaining when their lot has been cast in evil days, and some unforeseen calamity has disappointed the hopes of the husbandman—if you shall find us better men in any land then count us if you will to have been careless and unfaithful shepherds. In the welfare of these parties we never can fail to take a warm and lively interest, and hence it is that we cannot with sufficient gratitude repay the exertions of this high-minded and patriotic institution which seeks to promote the welfare of those who belong to it, and which this evening exhibits the comely spectacle of landlord and tenant as having one common pursuit and one common interest united in free and friendly converse, competing with each other how they may best promote the welfare of their common country.

The CHAIRMAN observed, in reference to the Highland Society, that it had now been in existence for eighty years, and instead of increasing in infirmity as it grew older, it was increasing in vitality and energy. (Cheers.) As a proof of this he might state that on a recent occasion not fewer than 153 persons had been admitted members of the Society in one day. One cause of its great success had undoubtedly been the great influx of the tenant-farmers of the country into the Association. These tenant-farmers had taken a great interest in the Society, and the local agricultural societies in connection with it, had contributed much to its success. (Cheers.) As a proof of the very high position which the body now held, he might mention that only last year it was

entrusted with the management of the statistical inquiry then instituted. That inquiry had been most successfully conducted, and its success was no doubt greatly owing to the services rendered by the farmers of the country. As to the occasion which had brought them together, he felt that it was unnecessary for him to expatiate on the character of the show; in the presence of so many men of much greater experience than himself, he would not presume to point out its particular features, but he was sure all would agree with him in thinking that it had been a most successful one.

Earl GREY, in proposing the Deputation from France, among other happy remarks observed: Gentlemen, you will also I am sure rejoice with me to have this opportunity to give a cordial welcome to the imperial deputation which is present on this occasion. (Cheers.) I hope and trust that they have been pleased with what they have seen, not only here but elsewhere, particularly at the recent Show of the Agricultural Society of England. I hope that what they have seen upon these occasions, not only of our progress in agriculture, but of the state of feeling towards France which has been exhibited on this occasion, as it was upon that, must have given satisfaction to our guests. [Applause.] Gentlemen, I feel that it is quite unnecessary that I should say more in recommending this toast to your notice, and I will therefore now conclude by asking you to drink Success to the Agriculture of France, and the Imperial Deputation now present.

M. YVART, President of the French deputation, replied to the toast in the French language to the following effect:—The deputation had been sent to Great Britain for the purpose of obtaining information respecting the agricultural exhibitions of England and Scotland, and to report upon the effects of those institutions upon the improvement of the agriculture of the country. The deputation had been much interested in what it had seen, and had admired many a time the agricultural stock of Great Britain. The French Government will introduce into its own exhibitions whatever is good in the proceedings that the deputation had here seen. He [M. Yvart] had heard with great pleasure the toast to the agriculture of France, because there is no country where the agricultural interests are greater than in France—where there are so many people—so large a population—connected with agriculture. And in France, if the farmers have a good deal to learn from their neighbours, there is notwithstanding, some good farming. In the north of France they might see good farming—farming that will compare with that of the best parts of Scotland. There is in France great application of the science of chemistry to the growth of beet root. With chemistry the French first got sugar from beet-root, and during the last few years they have also got good spirits, which, in consequence of the disease in the vines was much needed by commerce. In other parts of France they apply some good practices to the production of cattle, though not by the means of turnips, but with some plant which is better adapted to their dryer

climate. This plant, which is extensively cultivated, and takes from a great depth the necessary moisture, is the lucerne. By its aid, the farmers around Paris are able to grow beautiful wool and good beef and mutton. He hoped that France will show next year at the great Exhibition that it also has good cattle and splendid merino sheep, such as the Scottish farmer would greatly admire. And he could assure them, that they would receive on that occasion as good and as hearty a welcome as that which had been received by him and the other members of the French Deputation. (Cheers.)

Sir J. S. FORBES.—It is with great satisfaction that I have to propose a toast relating to the agriculture of the sister countries. Although this Society has long been engaged in promoting agricultural improvements in Scotland, its sympathies have been already warmly enlisted in the prosperity of agriculture in the neighbouring countries. And it is therefore, my lord with great satisfaction that I have to propose the Royal Agricultural Society of England and the Royal Agricultural Improvement Society of Ireland. These Societies have both adopted considerable portions of our system in their organization, and we have had the greatest satisfaction in co-operating with them and assisting them in following the course which we have so long endeavoured to pursue in this part of the country. Their success, my lord, had been quite equal to the energy with which they have carried on their operations, and they have certainly advanced with a rapidity proportioned to the power which they were enabled to bring forward in the cause in which they were engaged. (Cheers.) In England their shows have become proverbial as exhibitions which cannot be equalled in any part of the world, and in Ireland, where there was so much room for improvement at the commencement of the undertaking of the Great Irish Society, much has been achieved, and the progress of the Society has been most satisfactory. I regret that the noble Earl (Earl Grey) who lately proposed a toast to the meeting, has unfortunately been obliged to leave, or I should have coupled his name with this toast; I shall, however, now simply give the Royal Agricultural Society of England, and the Royal Agricultural Improvement Society of Ireland.

We make room for the following remarks of Mr. BAILLIE and Mr. AITCHISON, in reference to the tenantry of Scotland, and the Local Agricultural Societies. The former observed:—I acknowledge, my Lord, that it is with the greatest pleasure and the most heartfelt satisfaction that I rise to propose health and prosperity to the tenantry of Scotland. And in introducing the toast to your notices what can I say which is not already well known and acknowledged? Upon the whole habitable globe there is no body of men who have made for themselves so high a character for their skill, for their enterprise, for their perseverance, under difficulties, as the tenantry of Scotland, taking them as a whole. (Applause.) I am perfectly aware that I must be addressing many men who came from distant parts of the country, many in all likelihood who are tenants, and who

are farmers on the other side of that silver Tweed on the banks of which we are now sitting. And I would therefore say that I do not make the statement which I have made in any spirit of invidiousness or with any wish to raise any unpleasant feeling in their minds, because I, a Scotchman, choose to say that there are no tenants like the countrymen whom I am glad to say are my countrymen. (Applause.) If there is any one of you, if there is any Englishmen here who doubts what I say, who would wish to see the proof of what I have stated to you, I would ask all of you, gentlemen, to wander through the fields which lie on this beautiful river, to go along Tweedside, to visit the Lothians and to look at the grain crops, and to look at the species of Agriculture of which we in Scotland are particularly proud—our turnips—I would ask those who doubt my statement to go through these districts and when they return to me I am sure they would say that they found a country which was cultivated and which was farmed equal to many of the gardens that they had left behind them in England. (Cheers.) I have very little doubt that these gentlemen have all heard of Berwick and Roxburgh, and the Lothians, and they will say “Why you have chalked out the very best counties in Scotland, you have picked out the gardens of Scotland as specimens of the skill and enterprise and perseverance of Scottish tenants.” Well, I would say, come a little further with me towards Meellerstrain, and in that part of the county I will shew you land which was moors and mosses, a sort of country which by an English eye would have been said to be barren and unimprovable, and I will shew you where I used to shoot snipes and wild ducks, and where the plover and the muirfowl almost alone dwelt, the change which has been effected by the enterprise and by the skill and by the perseverance of the Scottish tenantry. I will shew as fine arable land as any one can boast of on Tweedside. But I will take you a little further, I will ask you to come with me to the land of brown heath and shaggy wood. I will ask you to come to the Highlands, and when you have thus seen Tweedside and Aberdeenshire and Skye, I will then believe that you will come to me and say, “Now I understand why you said that there was skill and enterprise and perseverance about the Scottish tenants which cannot be surpassed by any other tenants in the world.” (Cheers.) But I happen to have the honour of being a Scottish proprietor, and I am sure I may safely say that I only echo the feeling of almost every other, if not of every other proprietor, when I say that we regard every tenant dependent on us as our friend—(cheers)—for you will join with me, my lord, in the opinion that there can be no more highly educated, no more intelligent, active and spirited men than the Scottish tenants, take them as a body. As to the local agricultural societies, I will only say that they have been of the very greatest importance to the interests of agriculture, and I am persuaded that by continuing the course which they have adopted of giving premiums to the ploughmen they will promote in a very great degree the agricultural interests of the country. (Cheers.)



Mr. AITCHISON, Linhope, in returning thanks, said—I feel almost ashamed to present myself on this occasion before so many distinguished men in this part of the country who have superior claims to acknowledge this toast. Unworthy as I myself am, however, I can most unhesitatingly claim a great deal for that body to whom I have the honour to belong. Though I cannot pretend to say that they so far transcend their brethren on the south side of the Tweed as Mr. Baillie has said, I will say this, that their public distinction and private worth entitle them to the respect of all classes of their fellow-countrymen. (Cheers.) By none can they be surpassed in loyalty to the sovereign and obedience to the laws, for general integrity of character, and respectful demeanour to their superiors. Nor are there more distinguishing features in the Scotch farmers' character than that patient endurance which they have evinced on all occasions when contending against buffings of adversity, for then their energies never slackened, their spirits never quailed under their discouragement or adverse fortune. And should unhappily the prosperity that seems to have smiled on all classes of the Queen's subjects be interrupted by that war which has been frequently alluded to this night, then will I venture to predict that the farmers of this country will again show the same constancy—(cheers)—that they will as cheerfully as the first dignitaries of the land contribute their share of pecuniary support in giving strength to the strong arms of Britain when stretched out in the cause of the oppressed and in vindication of freedom. (Renewed cheers.) Many of the previous speakers have particularly alluded to the close union that this country has with France, and to the war in which we are embroiled, but I am sure there is no nobleman or gentleman present who will not also admit that there is nothing more calculated to consolidate and strengthen our union than landlord and tenant competing for the same honours in the same showyard, dining together in the same pavilion—(cheers)—and there exchanging their sentiments in a way calculated to produce that confidence and respect which no disparity of rank ought to discourage, and no conflicting public opinion disturb. Such a course is calculated to produce a salutary influence on society, far beyond what haughty superciliousness even could accomplish. (Cheers.) Mr. Baillie in proposing the health of the Tenants of Scotland spoke of the brown heath and shaggy wood, and about the moors at Meellerstain which have been brought into cultivation: but I am sure, gentlemen, nothing is more calculated to produce that congeniality of sentiment and reciprocity of conduct between landlord and tenant than unions of this kind, or more calculated to give an impetus to that progress of agricultural improvement which of late years had been carried on with a rapidity which baffles description and almost refuses comparison with any former period in the history of our country, and which year after year has presented to the eye of the passing stranger one vast panoramic succession of improvements. (Applause.) With such causes and with such unions as those to which I have alluded, I think

are intimately and primarily connected the bringing the fertilising produce of other climes to our shores, clothing those bare and precipitous hills with verdure, and transmuting the barren moors and waters into cultivated fields which are at this moment waving in all the luxuriance of autumn. (Cheers.) And this happy state of matters, is certainly the more gratifying as it is the more secure, now that the tenants of this country no longer lean on a broken reed, now that they no longer look to law-givers, but to lease-givers. (Cheers.) I hope then lease givers will ever consider that though they are the lords of the soil, it is the tenantry of the country who convey to them her treasures—they, in the language of Burke, are the Corinthian capital of polished society; we are the pillars which support the fabric; and if we from any cause should be injured, they also will be involved in the same ruin. (Loud Applause.)

The money taken at the doors on Thursday was about £623, of which £123 was in half crowns, the rest in shillings. This sum gives 10,984 paying visitors. There were probably about 2,000 other persons, such as members, exhibitors, &c., who entered the grounds without payment, so that the total number of persons who entered the show-yard on the principal day was about 13,000.

Mr. MAXWELL, the Secretary, submitted a comparative statement of the entries of the present and previous show in 1841, showing the great progress this Society has made within the last thirteen years:

|                   | 1841. | 1854. |
|-------------------|-------|-------|
| Cattle, - - -     | 175   | 175   |
| Horses, - - -     | 96    | 141   |
| Sheep, - - -      | 678   | 774   |
| Swine, - - -      | 33    | 73    |
| Poultry, - - -    | 0     | 261   |
| Implements, - - - | 60    | 357   |

#### GREAT NATIONAL SHOW AT ARMAGH.

(Abridged from the *Irish Farmer's Gazette*, August 12.)

THE annual show of the Royal Agricultural Improvement Society of Ireland was held, in the ancient city of Armagh; the place selected being the fine square opposite the court house, called the Mall, the central green being fenced off by rough high wainscoting, inclosing an area of several acres for the purpose of the show, leaving the broad promenades surrounding the square still available to the public. The area was most ample, and the internal arrangements the best, and most complete, of any that have yet been adopted at previous shows. A very fine fountain was erected in the centre of the yard, and the comfort and maintenance of the various animals amply provided.

ed for, which were highly creditable to the parties engaged in designing and carrying out the exhibition. The show of short-horns was really a magnificent spectacle; that of the other acknowledged varieties was excellent, and in several cases very superior. Sheep were numerous, and numbered amongst them many highly bred and valuable animals, and pigs were so thoroughly bred, and so numerously superior, as to make it a task almost approaching the impossible, on the part of the judges, to make their awards, and to leave even our best breeders scarcely anything more to do in the way of improving our swinish multitude; the difficulty now appearing to be to keep them permanently up to their present standard of excellence. In horses were exhibited many excellent animals; and the poultry, though not numerous, presented very superior specimens of the most approved varieties. Amongst the implements were exhibited some of the best and most successfully-adapted inventions of the best makers in the three countries, several of them being new and local ones, which, in design and workmanship, were fit competitors with our friends at the other side of the Channel, particularly in field implements. The judges of implements proceeded with their inspection, and unexpectedly had a trial of ploughs in a field about a mile outside the city, the swing-ploughs selected being those of Ransome and Sims, Ipswich; Ritchie, Ardee; Clarke, Moira; Fleming, Monaghan; Gray, Belfast; Miller, Dunleer; Allen, Money-mors; the subsoil ploughs being Ransome's and Gray's. They also tried Gray's turnwrist plough, and a sevenbull harrow of Mrs. Jane McConnell's, Armagh. Our readers will gather a pretty correct idea of the character of the Show and the present state and prospects of Agriculture in Ireland, from such portions of the speeches given at the public Dinner, as our limit will admit.

The DUKE OF LEINSTER, President of the Society, proposed the health of the Lord Lieutenant, the Earl of St. Germans, when his Excellency observed:—I had great pleasure last year in meeting the members of the Royal Agricultural Society of Ireland on the shores of the Lake of Killarney, and I have equal pleasure now in meeting them in a less romantic but not less fertile and important district [hear, and cheers]. It is very agreeable to me to be present at this meeting, and to witness the progress which agriculture is making in this part of the country [hear]. Much of that progress is, I think, fairly attributed to the labours of this society, by

bringing together large numbers of the finest animals of every breed, and by collecting, I am afraid not quite an equal proportion but still many of the most approved implements of husbandry, and also for enabling the farmer to see and to converse with experienced agriculturists from any part of the kingdom, and to confer upon the farmer a benefit, the value of which it would be difficult to overrate. [Hear, hear]. But gentlemen, much as has been done in this way, if the agriculturists of the country wish that it should retain its present proud position at the head of the agricultural countries of the world, they must redouble their exertions [hear]. A noble friend of mine, who is present at this table, Lord Claude Hamilton, placed in my hands, the other day, a very curious and interesting account of the proceedings of a French commission appointed by the government of France, to visit the Great Exhibition of 1851, and afterwards to travel through the most important agricultural districts of Great Britain and Scotland. That account shows the attention bestowed by that country upon all the inventions and discoveries that are made in this empire. They give detailed descriptions and drawings of all the most recent machines and implements that have been applied to the purposes of agriculture in this country, and also drawings of the animals of various breeds which they conceive to be best adapted to the soil and climate of their country. I believe that other Continental states are travelling in the same direction, and are now convinced of the importance of increasing the quantity and improving the quality of the produce of the soil to the utmost possible extent. It must be borne in mind that in those countries they have the assistance of the government, and I believe the expense of the commission to which I have referred was entirely borne by the French government, and they also defrayed a considerable proportion of the cost attending on the introduction of new breeds of cattle, and of carrying into effect various agricultural experiments. Now, such an interference on the part of our government would be quite hostile to our feelings and wishes; but we have a resource in the co-operation and union of agriculturists among themselves, and to that resource we must look, if, as I said before, we would retain the position we now occupy as the first agricultural country in the world [hear]. I have adverted to the various ways in which the society has promoted the cause of agriculture in this country in the same manner as the sister societies in Scotland and England have furthered the same cause. But I trust my noble friend near me, and other gentlemen who are members of the council of the society, will not suppose I am in any way dictating to them. If I venture to offer one or two suggestions, which I hope will be received in the spirit in which they are made [hear, hear]. I have heard to-day, for instance, that the quantity of implements on the ground did not quite answer the expectations which had been formed. Nothing, I believe, could exceed the beauty and the perfection of the implements which were exhibited, particularly the one which we all saw with so much pleasure. I speak of the moveable



steam-engine and flax machine of the Messrs. Ransome, and some others ; but, on the whole, I am afraid that the number did not equal the expectations of the members of the society, and I would venture to offer for your consideration whether additional encouragement to the makers of the implements might not be given [hear, hear.] It seems to me, at least, worthy of your attention, again, whether a premium for the best cultivated farm should not be offered. There may be difficulties in the way of which I know nothing, but I believe it might have a beneficial effect upon agriculture if a premium were given for the best cultivated farms. I say it with great respect, but I think I have seen in some parts of this district rather more rag-weed than is consistent with good farming, and that some of the gentlemen upon whose ground I have observed it, would hardly compete with success for such premiums [laughter]. I do not know how far it might be practicable to diffuse more generally, at a cheap rate, information among the practical farmers, by means of journals, tracts, and other publications communicating the results of the experience of agriculturists, in other parts of the kingdom. These are matters, I think, for the consideration of the council. There is one point, however, upon which I entertain a very strong opinion—namely, how important it is that the society should exert itself to promote, to the utmost, the cultivation of flax, so that the Irish manufacturer should not want an adequate supply of the raw material [hear, hear.] I have been informed, upon what I believe to be good authority, that the cotton-spinners of Lancashire are now engaged in producing an article of cotton by which they do or may compete with the productions of the linen manufacturers of Ireland [hear]. Now, gentlemen, I have a very great respect for the cotton-spinners of Lancashire. I conceive them to be a most intelligent and valuable body of men, and I am very far from speaking with jealousy of them, believing, as I do, that the prosperity of that great staple trade, the cotton manufacture of England, is most important to the welfare of the country. It is, therefore, in no spirit of hostility to the cotton spinners that I speak, but I do say, that I should be sorry to see the extension of that manufacture taking place at the expense of the linen manufacture of Ireland [hear, hear]. I think, however, that that must inevitably be the case unless the Irish agriculturists provide the manufacturers with an adequate supply of the raw material at a reasonable rate, I am aware that a most useful society is in existence, especially devoted to this object : but I would respectfully suggest to the council of this society to consider how far they might exert themselves in the furtherance of the same object [hear, hear]. There is one point to which my attention has been called, and which I may take this opportunity of mentioning. It is with regard to machinery and implements which are now becoming very generally used in agricultural countries. Many of those machines require rather more delicacy and nicety of manipulation in the use of them than it is at first possible for the agricultural labourer to possess, and the result is that

accidents not unfrequently happen, entailing sometimes loss of limb or life. Now, I think, if the council suggested to the very ingenious men who have devoted themselves to the production of those machines, that it is expedient that, as far as possible, guards, fences, and so forth, should be applied to those machines, they might render really an important service to an humble but really valuable class of their fellow-countrymen ; and I am sure that a very small cost would be, in many cases, sufficient effectually to protect the lives and limbs of the persons having charge of those implements [hear, hear]. Gentlemen, now that I have no other suggestion to add to the rather long catalogue which I have offered, may I venture to congratulate you, which I do very sincerely, upon what I may, indeed, term the perfect and entire success of this exhibition [applause] ? I believe that a larger number of cattle, and really finer animals, are exhibited now than were ever seen at any previous exhibition [hear, hear]. In the few observations which I made last year at Killarney, I ventured to express an earnest hope that the exhibition of this year would not fall short of the one present on that occasion. I am happy to think that my hopes and anticipations have been more than fulfilled. Not only has the present show not fallen short, but very considerably exceeded, both in quantity and quality, that of last year [applause]. That exhibition I believe was superior to the exhibition held in Gloucester, and I have not heard whether any comparison has been instituted, but I believe that in all important respects this may stand, at all events, upon an equal footing with the great show at Lincoln, with this single exception, as it seems to me, that there is rather a limited number of implements and machines ; but I believe that in all other respects this exhibition has been entirely successful [hear, hear]. Before I conclude, may I, without touching upon ground which is most properly prohibited in this assembly, venture to congratulate you upon the state and prospects of agriculture ? I say not a word about the causes. I look merely to the state of things, and I am happy to say that the accounts from all parts of Ireland respecting the condition of the three great classes of the country—the owners, the occupiers, and the labourers—are most satisfactory [hear, hear].

The Earl of ERNE, one of the Presidents, remarked :—Ireland has been blessed by Providence with one of the best soils, he believed, in the world, but they had not taken advantage of the gift ; they did not cultivate the land as they ought, and one of the reasons, he maintained, why they were such bad agriculturists was, that their soil was too good. They merely scratched the soil, without dipping deep into the bosom of the earth. In England and Scotland the soil was properly tilled, and why should not Irishmen do the same ? They were equal in commercial matters, if not decidedly superior, to the other parts of the country, and he could see no reason why they should not likewise excel in their agriculture. It made him rejoice to see that upon the whole the society was progressing rapidly in the estimation of the public, for within the last three years their

numbers were increased by 700. This society had, during thirteen years, done much more than either the Scotch or English society—that was to say, taking into account the amount of funds at their disposal. They brought over the best animals from the sister countries, and kept them here for breeding purposes for twelve months, and the result was, they were now able to compete successfully with English and Scotch agriculturists. They had also established branch societies, and had used their exertions to impart good, sound information to the farmers of this country. It had done much for the welfare of Ireland; and he trusted that the gentlemen of Ulster would give the old Ulster tug, which was, a long pull, a strong pull, and a pull together; and if they did, Ireland would soon be

Great, glorious, and free,  
First flower of the earth, and first gem of the sea.

Lord CLANCARTY responded to the toast of the Royal Agricultural Improvement Society of Ireland.—Notwithstanding what the Lord Lieutenant had said about implements, he should say that there had been an exhibition in that department, sufficient to show that there was a growing appreciation of improved implements on the part of the Irish farmer. He thought, however, that there could still be further improvement, which, he trusted, he would yet see. He saw before him the representatives of every creed and party, with the representative of royalty to cheer them on in their work; and he trusted that it would have the effect of pushing them forward in their exertions on behalf of the society. It was a most striking fact that, in the midst of a terrible war, they could carry on these social meetings with such success (cheers.) From the very grounds, perhaps, on which they then stood, had St. Patrick banished the terrible monsters which once infested this land—(hear, hear)—and he asked, had they not even now terrible monsters to banish from their farm-yards, replacing them by the noble animals they saw to-day—had they no thistles to banish, which could be replaced by the noble shamrock (cheers)? The record of what they would do in this respect would be seen on the face of the soil, and by the statistics of agricultural products; and he trusted they would not forget they had a duty to perform to themselves and to the soil of the country which had been placed at their disposal. He believed it was reserved for Armagh to restore its ancient name in literature. He had greatly admired its Observatory and Public Library, and he hoped that, when so much was done for knowledge, a great deal would be done for its promotion in respect to agricultural subjects (hear, hear).

Lord TALBOT DE MALAHIDE observed in reference to the national Agricultural Societies of Scotland and England, and the Royal Dublin Society:—He had not the honour of belonging to the Royal Agricultural Society of either Scotland or England, but he felt proud of his connection with the Royal Dublin Society. It was the first body that attempted in this country to combine theory with practice by introducing the practice of scientific agriculture. Having briefly, and in complimentary terms, alluded to the exertions of

the Royal Highland Societies of Scotland and England, his lordship went on to say that no person could question but the Agricultural Society of Ireland had done much in improving the country. With respect to it and the Royal Dublin Society, there never was a spark of rivalry existing between them (hear), and he trusted that for years they would continue to pursue their useful avocations. They were both exhibiting societies, and consequently had much in their power. In alluding to the Dublin Society, he felt bound to call the attention of agriculturists to the Agricultural Museum. It was an ample store-house of practical information, and no one could visit it without deriving benefit (hear, hear).

Lord NAAS, in proposing the Royal Flax Improvement Society of Ireland, observed:—It had for its object the improvement of the culture of a plant the most important known in domestic agriculture; it was the production of a plant which formed the raw material of their staple—he might say their only—manufacture. There was a time when the culture of this plant was of more paramount importance than at present, when they were engaged in war with a power and a country from whence they had been accustomed to draw a great portion of flax and flax-seed. It behoved the flax-farmer of the North, therefore, to put forth all his energies and endeavour to produce for the manufacturer as great a quantity as possible of the raw material. And it also behoved him to put in practice the new system of culture, by which means he could preserve the seed (hear, hear); for unless they could procure a greater proportion of seed at home, they might feel a difficulty in obtaining it from foreign countries. The association had already done good service in Ireland, and he hoped the day was not far distant when sufficient crops of flax would be raised to supply all the demands of the manufacturers (applause).

Viscount MONCK made the following pertinent remarks, in reference to the duties, qualifications, and influence of Judges:—Gentlemen, our exhibitions are not held merely for the purpose of rewarding men who produce a good beast, or for bringing to the test those feelings of emulation which are certainly calculated to advance the cause of agriculture (hear, hear). I hold that the principle object of our meeting is to create a sound standard of taste with reference to agricultural subjects—to foster that taste when created—to give the farmer an opportunity, as has been already remarked by the former speaker (Mr. Kirk), of comparing their own things with the things produced by other agriculturists, and thereby enabling them more effectually to form their opinion on the abstract taste and merits of their own animals (loud cries of hear, hear). These being the objects of our show, you can easily perceive that if the judges appear, from want of ability—from want of impartiality, or from any other reason—to give an unsound decision with reference to subjects committed to their adjudication—our shows, instead of accomplishing the objects which we have in view in holding them, will positively do injury; because if a judge awards a medal to an imperfect ani-



mal or production of any kind, instead of creating a true standard of taste in reference to that class of productions, he creates a false standard of taste, and induces men to compare their animals with the standard which, instead of giving them information, will positively do them injury (loud cheers).

Mr. WILLIAM TORR responded to the health of the Judges, and congratulated the assembly on the very splendid exhibition they had that day witnessed in the show-yard. He had visited many an exhibition in connection with their society, but he could with sincerity say this was by far, as a whole, the best he had ever witnessed; and most decidedly it was the best exhibition of sheep he had ever seen in Ireland (hear, hear). The show of implements at Armagh, however, did not come up to the show of animals in any way; and he thought it behoved the Royal Improvement Society to bestow some little portion of their funds towards effecting an improvement in this respect; for it was his opinion that, instead of giving medals and commendations for implements, a portion of their funds should be appropriated to giving prizes (cheers). It was very well for the extensive implement manufacturer, who could procure skill and labour in the market, to get a medal when money was not a matter of moment to him; but with the small manufacturers, a medal did not repay their labour, and a £10 note was more acceptable than any such token of superiority (loud applause).

The following facts relative to the celebrated Short-horn Cow, "*Butterfly*," owned by Charles Townley, Esq., of Burnley, Lancashire, will be interesting to our readers.—*The Irish Farmer's Gazette* gives a well executed wood-cut of this truly beautiful animal, and also of others that gave so high a character to the Armagh Show:—

"Charles Townley obtained the first prize, of fifteen sovs., with his far-famed cow, *Butterfly* also the Gold Medal, the Silver Medal, and Purcell Challenge Cup, which makes it the property of Mr. Townley. She is now five years old, and has, this year, with her two calves, won thirteen prizes in England and Ireland, and is again in calf. She has travelled upwards of 6,000 miles to the various shows, and won upwards of fifty prizes; she was, we believe, never beaten, and never looked better. Master *Butterfly*, her calf, took the first prize in his class at Lincoln."

#### THE SOUTHDOWN SHEEP SHOW AT BABRAHAM.

It has been well known for some time past that, for this season at any rate, Mr. Jonas Webb would not occupy his usual position as an exhibitor at the meeting of the Royal Agricultural Society. Whatever reason may have led to such a determination, it could scarcely fail to give additional interest to his own gathering, held, as announced, on Thursday last. Beyond the fact that this was the only opportunity for inspecting he picked animals of his famous flock, the visitor had good grounds for assuming that the show might be even better than it yet has been. There could be no reserve for the Great National Ex-

hibition of the kingdom, and thus many rams might come into the letting at Babraham, which under former circumstances, it would not have been politic to put up. Any anticipations of this kind were amply realized. There were never, we believe, so many sheep entered at the Babraham show; and never did those hired average a better price. We have thus an ample guarantee as to the continued excellence of Mr. Webb's sort; and this authority was, perhaps, of a more satisfactory character than it invariably has been. Ranging in some cases to extraordinary biddings, there was still wanting that go-a-head decision to have certain lots on *any* terms, which made the meeting of last year so especially remarkable. It is true, amongst the company we met at Babraham, on Thursday, America and France had both their representatives; the latter in two gentlemen officially connected with the advancement of agriculture in that country. These, however, unlike some of their predecessors from "foreign parts," were content to take rams, to be had at comparatively moderate sums. It was the home breeder who on this occasion contributed chiefly to the business of the meeting—it was he who gave the long prices—it was such men as the Duke of Richmond, Mr. Lugar, Mr. Hudson, Mr. Sexton, Mr. Rigden, Mr. Turner, and others, who, by their presence and support, afforded us some tangible proof as to the real merit of the Babraham flock.

Fashion, the ready servant of established success may always do much, as often enough stand answerable for more than can be really justified. This of itself, backed with a good word well applied, may tempt the untutored stranger to the highest flights; but this alone will never become authority. It is when we see "the Down men" returning here, again and again, for fresh blood, that we come to record the Babraham sheep as still the first of his breed—however altered or improved since his introduction to the flat lands of Cambridgeshire, one of the most renowned of the Sussex breeders readily admitted, that it was by the aid of Mr. Webb's breed he had only the other day been able to carry off all the prizes at a meeting in his own county.

The following statistics connected with the day letting may be not without their value for future reference:—

Let at the hammer, 75 sheep for 1,801 guineas, thus averaging about £25 4s. 3d. each; an improvement in every way upon former years, to be best gathered from the following table:—

|      | Number Let. | Average Price. |
|------|-------------|----------------|
| 1851 | - - - 62    | - - - £22 2 6  |
| 1852 | - - - 69    | - - - 22 3 1   |
| 1853 | - - - 71    | - - - 22 6 3   |
| 1854 | - - - 72    | - - - 25 4 3   |

The highest priced sheep was a yearling, one of the six picked of the whole flock. He was the second called in at the reserve price of 50 guineas, but knocked down to Mr. Lugar, of Hengrave, Bury St. Edmund's for 102 guineas. The highest price last year, and the highest price at which, we believe, a sheep was ever known to let, was 130 guineas, the buyer being an American.—*Abridged from the Mark Lane Express.*

# NRW SYSTEM OF FARMING.

(From Rev. Mr. Smith's Pamphlet, on the Loïs Weedon System.—Continued, from Page 267.)

I have limited my subject to wheat; but I will go beyond it for a moment to state that, with one or two exceptional crops, the same principles should guide me throughout. I should have rotations; with root-crops, in large proportions; expecting the same success with them as I have hitherto had; and, with experience for my warrant, I should look for a produce from one acre, equal to a high average usual produce from two acres. All should be carted off with the quarter-cart; the interlining crops compelling me to this. Were the land suited for Saintfoin or Lucerne, I should grow that, as I grow wheat; with this difference, that it should be grown in double rows, two feet apart, with three feet intervals. Vetches and clover should be without intervals. If the land were adapted to clover, I should grow that, in rotation, separately; and with trenching and gradual exposure of the subsoil and suitable dressing, I should have no fear of clover-sickness in the soil.

The point I have in view, however, is, pre-eminently, wheat. For if, on wheat land, this crop—at 35s. or 40s.—can be grown at a profit to the proprietor of from £7 to £10 and to the tenant, with a rent of 40s, from £5 to £8 per acre, it is manifestly the most important and most precious crop he can take.

Selecting, then, out of my 400 acre farm 100 acres, the best suited for the purpose, tolerably level, and if possible in fields adjoining each other, I set them apart exclusively for wheat.—For, there are these advantages in such a separation,—that they are, as I suppose, the most suitable fields for the most valuable crop; and that the somewhat difficult operation of first setting out the 5 feet lands with accuracy, once done, is done for ever.

I am entering now on a business of great moment, demanding and repaying with interest all the care and attention I can give it; for, if I proceed with judgment, my nett annual profits from these 100 acres will be, year after year, from £700 to £1000.

I ascertain, then, first of all, what food or manure it is that the wheat crop requires, and how much per acre. That point I find determined for me, and that a certain quantity of organic substances is necessary, and that other ingredients besides, of mineral origin, are equally indispensable for the perfect formation of the plant. These substances, then, must be provided; but how?

With regard to the source of the first—the organic portion—it is evident now that Tull was right, and can be safely followed. His theory was, that by a peculiar management of the soil, he derived from the atmosphere a sufficient and endless supply of nourishment for his wheat crops. Too happy had he been had he known his wealth! He knew it not, however, by actual analytical proof, but still he clung to his belief—prophetically, as it were—with a pertinacity as strong as to a settled fact.

The fact has now been proved, that the atmosphere does contain every organic constituent of the wheat plant, and is able to afford to land, duly prepared for its reception, an abundant supply of each. The only doubt, as regards abundance, is in the case of ammonia. It is difficult, nay, impossible, to arrive at the actual entire amount of that substance contained in the atmosphere and brought down on the soil; but an approximation can be made, from known experiments, which is close enough for our purpose.

Taking Dr. Fownes' revised estimate\* of the annual amount of rain which falls on an English acre of land, the sum will be 5,096,520 lbs. Each pound of rain containing  $\frac{1}{4}$  grain of ammonia, in round numbers the amount of that substance will be 182 lbs.

Now, it is asserted by a high authority in these matters, that a bushel of wheat contains 1 lb. of nitrogen; and that, so great is the waste in furnishing this 1 lb. of nitrogen, that the surprising weight of 5 lbs. of ammonia (equivalent to about 4 lbs. of nitrogen) is required for the supply. As wheat land has been proved to have the power of absorbing and retaining for use whatever ammonia may be in excess, it is an unexplained mystery how this can be; unless, indeed, we receive—as we may well be tempted to do—the original and most ingenious solution of Professor Way, that the lost treasures have been engaged in conveying silica to the straw, and so been “wasted in the act.”

Granted, then, that such is the case,—that 5 lbs. of ammonia are demanded for the service of each bushel of wheat, and supposing the crop to be 35 bushels, the required amount of ammonia per acre will be 175 lbs.

But, the rain provides somewhat more than 182 lbs. per acre, so that from this source alone there is more than enough for the wheat crop by several pounds.

Besides the rain, however, there is the snow and the fertilizing dew. How much unmeasured and immeasurable ammonia does the dew drop down? The air, too, itself, with its never-ceasing impregnation of the porous soil?

Allowing it to be possible, and even probable, that from all these sources together a quantity of ammonia is conveyed to the earth, equal to that which comes with the rain, there will then be, not merely a sufficiency, but, to a large amount, an actual redundancy of ammonia for the wants of the most spendthrift plant.

Tull, then, was right, and happier than he knew. For there, above, is indeed a reservoir, rich and inexhaustible, and ready to bless the well-tilled, expectant soil. Well worthy of remark, too, is the way in which these treasures fall. Unlike the distribution of earth-made manure, here a little and there a great deal, a mass in one place and a sprinkling in another, the benevolence of heaven is equable and diffusive, and spreads over the whole surface of the land alike, producing at harvest—where no remains are left of former irregular dressing—that even-

\* Prize Essay “On the Food of Plants,” Royal Agricultural Journal, vol. 4, p. 522, Note.



ness of growth which is so desirable and so beautiful to see. On all lands, whether light or heavy, it falls alike. But on pulverized clays,—in compensation, as it were, for their more laborious and costly cultivation,—it not only falls, but is retained and accumulates, and brings heavier crops. If, however, the light land farmer, with his more porous and unretentive soil, is denied this advantage, at least to its full extent, he will gratefully recollect that this manuring from the air is *continuous*. All the nourishment is not given at once or at twice, but is falling ever, and so can be taken up by his growing crops as it falls, and before it is carried away.

To those who allow—as they must do—that for plants in a state of nature there is an abundance of atmospheric ammonia, but deny this abundance to plants, like wheat, in their present state, I would say, with submission,—Treat the soil as I treat it, cut off from it the entailed curse of thorns and thistles, deepen it, make it friable, enrich it by exposure, and its condition will be equally artificial with that of the plant it supports.

I am provided, then, with one portion of the food or manure which the plant requires, namely, *the organic portion*, and if I but do my duty and fit my land for its reception, I have it in such proportions, spread it so equally, and given so continuously, as to surpass all the richness and all the labor bestowed on the soil by the hand of man.

But something else is wanting, equally important and indispensable. The rain and the dews, the air and the snow bring with them no *mineral food*, and without that the plant never reaches perfection. Of this food Tull took no account, and could give no account. And if the inferior land, on which he grew his thirteenth unflinching crop without manure, still gave out its supply of mineral matter, it was fortuitous,—unthought of, and unacknowledged, and must have come from his perfect and entire disintegration of the soil by tillage and exposure; and this supply, with all his good husbandry, must soon have reached its limit. For his practice was, never to go beyond the staple to move the subsoil.

We live in more favored times. We know now, by analysis, the composition of the wheat plant, and that food must be found of the same nature with itself, to make up its ingredients.—We know, for example, that its chief mineral ingredients are silica sulphate of potash in the straw, and the phosphates of potash, magnesia and lime, in the seed. No matter, then, how or whence they are procured, whether from the yard, the shop, or the soil, these substances are the same, and must be had. Does the land I have chosen for wheat possess them? I examine its texture, and find it varies; and that some parts are light, others heavy. It is well worth the outlay, then, and—as closely as that can be done—I have it analysed. The light land proves not to be wheat land; that is, the mineral constituents of wheat are absent, or only partially present. They must be all found there, however, in quantities adequate to the demand. And, I must either take this course: supply them from the yard—a costly and lavish procedure, overloading

the land with much that is useless, supplying what is wanted unequally, and entailing a heavy expense in the doing of it;—or, I must meet the special wants of the plant by special manures, easily applied, and with greater evenness and economy.

In deciding on the latter, I do not forget the balance sheet; and that the cost of the purchased dressing will reduce the profits by so much, perhaps £1 per acre. But it is a merited penalty I willingly pay for an unsuitable crop on light-working land; for the grain per acre is still from £6 to £9.

I next try the heavier land; and there I am safe. For, if it be so that the clay and the loam abound in the substances required, I need go no farther. To all intents and purposes the manure is already there; and, if I add more, it is simply superfluous and extravagant.

Now, it has been shewn to demonstration that wheat land does contain them, in most cases, in such abundance as to be practically inexhaustible.

Specimens of soils from five different farms were taken to Professor Johnston for analysis.\* The phosphates and alkalis—in their small comparative proportions—are always present in clays and loams. But a vast weight of silica is required for a good crop of wheat; and it was found that four of the analysed soils, at only 12 inches in depth, would furnish enough silica for 900 crops, and the fifth enough for 3,000 crops. But I trench by degrees twice twelve inches deep. In the first four cases, therefore, the number of crops would be 1800; and in the last, 7,200 crops.

I do not say that there is this amount of inorganic ingredients for the wheat, in their several proportions, in all clays and loams; for they vary exceedingly. But, setting aside altogether the few utterly bad clays and worthless subsoils that exist, and allowing in others a variation to an enormous extent,—reckoning also the amount of silica required for each crop to be understated by Professor Johnston,—it will come to this: Reducing these 7000 crops to 1000, or lower and lower still; and these 1800 to 500, or still lower than that; it will even then corroborate the statement of our great chemical authority, and confirm my belief, that “There is an almost unlimited supply of the mineral requisites of plants in soils”; and that “It is possible, from their universal prevalence, that sufficient working of the soil may enable us to dispense with any artificial manures.”

Here, then, is all I want for the sustenance of my wheat crops. And here, too, I will add in conclusion, there is the one great point on which the accident of living in a happier age, has enabled me, with infinite advantage, to differ in practice from Jethro Tull. By means of the deep-stirring, uplifting fork, in lieu of the glazing and level plough, I bring up these mineral treasures, inch by inch, to be disintegrated and decomposed by the summer-fallow; exposing them gradually year after year, till I reach the limited depth of

\* Prize Essays of Highland Agricultural Society, vol. II., p. 102.

two feet; beyond which it is neither needful nor convenient to go. The time may come, however,—some think it not far off,—when the resolute hand to wield the fork may fail me. I make little account of this year's deficiency of hands, when all the harvest ripened at once. Nor do I fear that, with fair wages at home, our home-loving husbandmen will be tempted, in any draining number, to cross the seas. But, I may err. And, if I do, I doubt not for an instant that the want will be met. A sharpening of the wits, an exercise of all the ingenuity with which Providence has gifted the mind of man, will be "a necessity of the times in which we live." And if the fork is to give way, it will be to something hitherto untried, and of equal, or perhaps superior efficacy. What will that something be? The space to be tilled in the intervals is barely thirty inches. It could not be wider; for the yield would then suffer in bulk. Were it narrower, then even the fork could not work. There is no hope in the plough; nor in anything plough-like. Nor will the subsoiler do; that only stirs, and does not displace, or bring up. Is there no tool to do as the mole does? Look at the operations of the cultivator mole. See his neat process as he burrows. Watch him as he works down into the earth, tearing it, and bringing it up, claw-full after claw-full; and how he throws it behind him, granulated, under soil uppermost, on the surface. The process is perfect, and just what we want. But, is it inimitable? Is it beyond the wit of man, with steam, and the whole power of dauntless mechanism at his command? I can readily conceive, within the bounds of the most sober and rational expectation, an implement such as this:—The land to be cultivated is thirty inches in width. The body of the machine is suspended over this land on four large wheels, each pair of wheels being four feet apart, and resting on the intervals. The working part of the implement is circular, and revolving, with strong claws, so formed as to enter the soil, to bring it up, and to drop it. The moving power is steam, which moves it with a motion quite independent of the wheels. I see it at work; as I saw the mole work. I watch it as the claws first enter the ground; I see them tearing their way, slowly, but most surely; and how, claw-full after claw-full, the soil is thrown backward and dropped, tilled at one process, with the crumbled subsoil left, partly mixed, on the surface. I see all this, not as a pleasing and empty vision, but as a substantial reality. And I should be doing little justice to my own feelings, and to the genius and originality of him\* who first placed such a design before the public, in the pages of the *Agricultural Gazette*, if I did not give utterance to my conviction of its vast importance, and of its entire eventual success. The mole-cultivator—if I so may call it—is already in model. Every point has been well considered by its gifted inventor; and beyond a question it will be forth-

coming when that threatened necessity of the times demands it.

The Implements in use already for economizing labour on my plan, are described in the following pages. Besides these, the width of the intervals between the wheat has suggested another simple means of extending the economy of labour.—Adapting to my scheme what appears to me to be the best known principle of Reaper, and adding to it one little improvement to make the process easier and truer, I am having a machine prepared, at very little expense, light, easily worked with a single horse, to cut one land of triple rows of wheat at a time. This space of land, together with its interval, is five feet wide. So that, in reality, I shall thus reap a superficial acre with almost equal speed with the widest Reaper in use.

#### PREPARATION OF THE SOIL FOR WHEAT, GRAIN, AND OTHER CROPS.

Those who intend to put their fields down to grass and grain, should remember that the length of time in which they will remain profitable in grass, must depend materially upon proper mechanical preparation of the soil. They should recollect that deep plowing is now the order of the day, and not as a mere matter of fashion, but from the well-ascertained fact that deeply disintegrated soils will furnish a larger amount of pabulum for plants than those which are surface-worked. Where the roots of plants can travel readily, they must of necessity come in contact with a greater amount of surfaces of particles, and therefore, receive a larger amount of those materials which have been rendered suited to their use by the action of Nature's laws. They should remember also that in deeply disintegrated soils the grains and grasses never suffer from drought; for in such soils, the condensation of moisture from the atmosphere, circulating at a greater depth, must protect the plants from those ills consequent upon the absence of a proper amount of moisture, and the presence of this moisture, not only conveys such pabulum as the plant requires, placing it in a condition to be appropriated, but also supplies the conditions for the more rapid chemical changes, which should continue to take place upon both the organic and inorganic constituents of the soil during the growth of the plants. To secure these conditions, then, we should not only plow the surface deeply, but follow in the same furrow with the sub-soil plow, disintegrating it to a great depth, slightly elevating it, and thus supplying the means of getting rid of excess of water during floods, and securing a continued supply during drought. This sub-soiling is absolutely necessary for the more profitable culture of those crops which are called tillering crops; and among these will be found the grains and grasses.—Every farmer knows that a single grain of wheat will throw up many shoots, and that these arise from tiller roots thrown out from the crown of the plant; and he also knows that if any one root of

\* "The Chronicle of a Clay Farm," by Talpa. These papers, so infinitely amusing and instructive to the farmer, are now republished in a separate volume, with much new matter on Cultivation by Steam, and especially on the implement in question.



that plant has found its way down to the sub-soil, and has come in contact with the cold and not disintegrated portions, that the termini of that root will turn brown, become sickly, and the plant will cease to tiller. It is for this reason that shallow plowed meadows run out, and it is for this reason also that sub-soiled meadows never run-out. Let those who doubt this fact look at the grass growing over an old post-hole that may have become accidentally filled up. Plants will continue to tiller in such a situation, long after the average surface of the meadow has ceased to replace itself.

We should also be sure that the right amendments are added to the soil. We should know that the leading constituents of our crops, particularly those of an inorganic kind, are present in sufficient quantities, and if they are not, they should be added before putting down a crop intended to occupy the soil for many years.—*Working Farmer*.

#### TIME FOR CUTTING BUCKWHEAT.

It is hard to give a precise rule for the best time to cut buckwheat. The grain continues to ripen successively, and while most of the stalks remain green or succulent, these grains will not drop off. It is therefore best to let the crop remain as long as the amount continues to increase by successively ripening portions. But as soon as the plant loses its fresh appearance, and the first ripened portions are found to separate easily, no time should be lost in cutting. The rule with some farmers in the north, is to allow the crop to stand till the first light frost, and then cut as quickly as possible, before the shelling process commences. But when frosts do not come early, it is cut before. As soon as the stalks are dead or dry, buckwheat threshes with great ease, but not before; hence the reason that when but partly dried, it is often found so difficult to thresh. At the north, it is usually sown during the early part of summer, sometimes nearly as late as midsummer; if sown too early, the grain does not set well.—*Country Gentleman*.

#### THE "ECONOMICAL MANURE."

For some time past there has been used to some extent in England and Scotland, an artificial manure, to which the above title has been given. If testimonials are to be relied upon at all, this manure *must* be possessed of very desirable properties. In the month of May last it was analyzed by a competent chemist in Edinburgh, and found to be composed *mainly* of, 1st. protosulphate of iron, or green vitriol, about 35 per cent; 2d. of sulphate of lime, or gypsum, about 16 or 17 per cent; and 3d. of chloride of sodium and other alkaline salts, about 26 to 34 per cent. In one specimen analyzed the chloride of sodium amounted to 16.31 and the other alkaline salts to 10.66, or in all 25.97 per cent; and in another specimen to 17.43 and 16.88 respectively, or in all to 34.31 per cent.

Now, as a manure of such a composition might be easily and cheaply got up by any agriculturist, we subjoin a specimen or two of the testimonials which have been given of its fertilizing properties. One testifies that on that portion of a field of barley on which this manure was sown broadest, mixed with ashes, the growth of the barley was wonderfully thick and luxuriant to what it was on the other portion of the field. Another testifies to its having most beneficial effects on his garden crops, and to his cattle being very partial to a part of a field of grass to which it had been applied. "Your manure," says Mr. John Davenport of Staffordshire, "improved the wheat very much, and the grass it sweetened, and the cows eat it off very bare all the summer." "Your manure," says one, "was sown with clover, and it is most luxuriant."

It is called the "economical manure," because  $\frac{1}{4}$  to  $\frac{1}{2}$  cwt., per acre fully equals in effect 3 cwt., of the best Peruvian guano, and because the saving in cost is thus at least 50 per cent. It is applied with two or more times its bulk of light earth or peat-mud, or ashes or sawdust or anything of that kind, broadcast. It has been also employed in solution. In this state we presume it was applied to some apple and pear trees, of which it is said to have improved both the foliage and the fruit. We may close by stating that it is sold in Great Britain at about or a little over the price of the best Peruvian guano, that is about £12 per ton.—*Country Gentleman*.

#### NIGHT-SOIL, ETC.

We commend attention to this subject, and invite our readers to notice the following from the volume recently published by Prof. Nash:—

In European countries, as also in some of our cities, this has been wrought by various processes into a dry, portable, inoffensive, but very powerful manure, under the name of poudrette. This is one of the forms in which the fertilising agents of the city are returned to the country, whence they came.

On the farm the night-soil may be put to good use in a less troublesome way. After being carried off in the spring—or better, in the latter part of winter, while it is yet cool—the bottom of the vault should be covered, at least a foot in depth, with fine black peat or mud, previously prepared and dried for the purpose. A little of the same should be thrown down daily through the summer, and once a week or fortnight during the winter. If plaster be occasionally added, it will be well, though this is not essential. The peat itself will be sufficiently *deodorizing*, if put down in such quantities as to be kept fairly moist and no more. It will withhold all foul odor. It is well to have an opening in the rear of the building, and a pile of prepared peat lying near, that it may be thrown down without much trouble, lest it be neglected. Good farming requires daily attention to many little things, and unless a previous preparation for them be made, these little things, important in the aggregate, are apt

to be lost sight of. A farmer might better bring peat several miles for the foregoing purpose than not to have it. In an ordinary family, as many as five loads of a kind of *poudrette* can thus be made, not as concentrated nor as portable as the article bought under that name in our cities, but sufficiently so for home use, and excellent for any soils except peaty, and for any crops except it may be for potatoes and other roots. For cabbages, wheat, corn, or clover, it would be first-rate. If used for corn, and especially if used as a topdressing for old mowing, it would be well to apply plaster plentifully with it. I know of nothing that will bring up red and white clover on an old mowing like it.

Many families make use of chloride of lime as a *deodorizer* or *disinfecting agent* about the privy. They pay for it in ten or twelve cents a pound; and, at that, it is ineffectual unless used in considerable quantities. Peat is cheaper and better. When peat can not by any means be obtained, black, vegetable mould from the edge of the wood, or wherever great quantities of leaves have drifted together and decayed, will answer. If this cannot be obtained, there is a sort of home-made chloride of lime, which can be prepared easily, and is worth more for agricultural purposes than it costs.

To prepare it, take one barrel of lime and one bushel of salt; dissolve the salt in as little water as will dissolve the whole; slack the lime with the water, putting on more water than will dry slack it, so much that it will form a very thick paste; this will not take all the water; put on, therefore, a little of the remainder daily, till the lime has taken the whole. The result will be a sort of impure chloride of lime; but a very powerful deodorizer, equally good, for all out-door purposes, with the article bought under that name at the apothecary's, and costing not one-twentieth part as much. This should be kept under a shed or some out-building. It should be kept moist, and it may be applied wherever offensive odors are generated, with the assurance that it will be effective to purify the air, and will add to the value of the manure much more than it costs. It would be well for every farmer to prepare a quantity of this and have it always on hand.

Again, he says:

Night-soil should be removed to the land every spring. Its value, as a fertilizer is greatly increased, if mixed with six or eight times its bulk of dried peat or swamp mud. Its value would be still more increased if the peat or mud, in a dry state, could have been thrown in with it daily, or once in a few days during the previous year; and this either with or without (better with) a little plaster, would have prevented the smell from that source, which is too often noticed about premises. *Poudrette* can be prepared in this way at little expense, and quit as effective as much that is offered in market at a higher price. Night-soil is valuable for grass-land, and for all kinds of grain. In whatever form it is used, it should be spread thinly over a large surface, rather than be put in large quantities in one place.

There is another article to which the last remark applies with great force. It is old plastering from the walls of rooms. This contains silicate of lime, and what is of more value than all the rest, *nitrate of lime*. This last is a very soluble salt, and is so valuable for any of the grain crops, but more especially for wheat, that not a particle of it should be lost. Every ounce of old plastering should be put upon the field. Even the rubbish of old brick walls should be pounded up and put upon the land. But this and old plastering should be spread thinly over a large surface. Probably a ton of either, if mixed with a compost that was to cover five acres, would benefit the first year's crop more than five tons spread on a single acre.

Whether the new occupant of this farm should go largely into the use of plaster, is a question for him to settle on the ground. He should, at any rate, have some on hand to use about manures. There is a strong presumption in favor of plaster on a farm upon which nothing is known of its effects by experience. He should inquire of his neighbors. If their testimony is against the use of plaster in that region, *let him not believe it*, but let him make the trial for himself. He may make it on a small scale at first, so as not to injure him much if it fails. If, on the other hand, the testimony of the neighborhood is favorable to the use of plaster, he might take it as undoubted. A hundred neighborhoods have testified falsely against the use of plaster in their particular location to where one has over-estimated its value. Very few are the locations where plaster is not worth the purchase-money, or more.

It is very true that plaster cannot be relied upon alone. It is not a manure in the fullest sense of the word. It contains but two ingredients, and those are not all that plants need. Plants could not grow in plaster alone, but that does not prove that they should have none. The truth is, *it acts partly as a manure*—feeding the plants with its sulphuric acid and lime, the very ingredients which clover, corn, potatoes, and some other crops, largely require—and *partly as a stimulant*—hastening, by its lime, the decay of vegetable matter in the soil. In other words, *it feeds the plant a part of their food, and it hurries the vegetable matter in the soil to feed them more*. On dry soils it performs another important office—that of *attracting moisture*. Some say it has not this effect. I know very well that in its unaltered state it has not. Set an open barrel of plaster in the air, and it will remain dry. But it does not long remain unaltered about the roots of plants. The sulphuric acid and the lime part company, and in their transformations they perform the three offices I have described—*feed the plants, convert half-decomposed matter into vegetable nutriment and attract moisture from the air and from the sub-soil*. This last office is important on lands that are dry. On wet lands it should not be used till they have been thoroughly drained.

Plaster will not do well permanently without other manure. It requires that organic matter should be present. In pastures, this is supplied by the droppings of the cattle and by the



decay of grass roots. On mowings, it should be supplied to top-dressings; and on ploughed lands, by harrowing in manure. It would be as unreasonable to complain of plaster because it will not act well always without other manure, as to find fault with roast-beef because it does not afford a suitable diet without other food. The same might be said of ashes. Land dressed with ashes alone, will soon be found in a sad condition; and yet the potash, soda, and lime they contain, are worth far more for agricultural purposes than the price generally allowed by soap-boilers. Their alkaline salts act favorably upon the silicates in the soil; they render insoluble silica *soluble*, and are therefore valuable on uplands; while on peaty lands, if well drained, and on any lands which abound in inert vegetable matter, their value is very great.

### CONSTRUCTION OF CISTERNS.

In consequence of the repeated inquiries we receive for information relative to the best construction of rain-water cisterns, we are induced to furnish some brief practical hints on the subject. The great value of an abundant supply of water to houses and barns, and which may be easily had by providing capacious cisterns, renders it important that the cheapest, best, and most convenient mode of construction should be adopted.

The two all-essential requisites for underground cisterns, are good hydraulic lime, and a supply of clear pure sand. These must be selected from experience or trial, or by choosing such as have already proved efficient for this purpose. Good hydraulic cement will in the course of a few months become about as hard as sandstone. When this hardening process does not take place, it must be attributed to bad materials, or to intermixing in wrong proportions. On the latter point, some are misled by adopting the practice employed in mixing *common* lime mortar, the hardest material resulting in this case where the sand constitutes about five-sixths of the whole. But the hardest *water-lime* mortar cannot be made if the sand forms much more than two-thirds of the whole.

A very common and a cheap form for the cistern is to dig a round hole into the ground with sloping sides, somewhat in the form of a narrow-bottomed tub, and then to plaster immediately upon the earth. Unless a slope is given to the sides, the mortar cannot be made to keep its place while soft, as it is nearly impossible to find a soil dry and hard enough to retain the plastering by simple adhesion. The top of this kind of cistern must therefore be wide, and consequently difficult to cover very large ones effectually and substantially. The covering is usually made by stiff and durable plank, supported if necessary by strong scantling, and over this is placed about one foot of earth to exclude completely the frost. A hole with a curb, about eighteen inches by two feet, must be left in this covering, for the admission of the water pipe or pump, and to allow a man to enter for cleaning out the cistern when

necessary. In cold or freezing weather, it is indispensably requisite to have this hole well stopped to exclude frost, which would otherwise enter the wet cement or walls, and produce cracking and leakage—a frequent cause of the failure of water-lime cisterns.

This is the cheapest form of such reservoirs, but a better, more capacious, and more durable mode is to dig the hole with perpendicular sides in the form of a barrel, and build the walls with stone or hard brick, to receive the plastering. In consequence of its circular form, operating like an arch, these walls will not be in danger of falling if not more than half the ordinary thickness of similar walls. For large cisterns they should be thicker than for small ones. The walls should be built perpendicular until about half way up, when each successive layer should be contracted, so as to bring them nearer together, in the form of an arch, reducing the size of the opening at the top, and rendering a smaller covering necessary. If the subsoil is always dry, or never soaked or flooded with water, the walls may be laid in common lime mortar, and afterwards plastered on the inner surface with the cement. But in wet subsoils, the whole wall should be laid in water lime. If the bottom is hard earth or compact gravel, a coating of an inch or two may be spread immediately upon upon the earth bottom; but in other instances the bottom should be first laid with flat stone, or paved with round ones, the cement spread upon these.

The plastering upon the sloping earth walls as first described, should never be less than an inch thick, and if the earth is soft, it should be more. On the stone or hard brick walls, half an inch will be thick enough.—Cisterns can rarely if ever be made free from danger of breaking, without giving them at least two successive coats, and three will be safer—the previous coat in each instance being allowed to become dry and hard.

As the best mortar begins to harden in a very short time after mixing, it is best to mix the lime and sand *dry*, and to apply water to small successive portions as wanted.—*Country Gentleman.*

### ITEMS ON POULTRY.

**THE POULTRY HOUSE.**—As every thing connected with poultry now-a-days has a peculiar interest, we give the following sensible remarks from an English paper. First of the roost and nest house. The floor should be sprinkled with ashes, or loam, or pulverized peat, or fine charcoal, and the floor should be cleaned off every week:—

“The yard should contain a grass plat, some fine gravel, slaked lime, dry ashes, and pure water. The nests should be lined with moss heath or straw. Evidently the Dorkings are the best breed; they will lay an average of 185 eggs each per annum. Fowls with black legs are best for roasting, while those with white legs are best

for boiling. If you want them to sit early leave the eggs under them. Fowls in their native habits never lay more eggs than they can hatch. Remember that no success can be expected from poultry-keeping if their houses be damp, cold, unclean, or badly ventilated; if their food does not approximate to that which they get in a state of nature, viz., a mixture of animal and vegetable food; if the water they drink be stagnant, the drainage of the manure heap, &c., or if the strongest and handsomest be not bred from."

**NESTS.**—Hens exhibit peculiar fancies about nests, which, like our watering places, suddenly become all the rage at one time, and pronounced unfashionable at another. Out of about ten nests in my own house, but three are at present popular, why, or wherefore, I know not, as they possess very different qualities. One of these is in a cold corner on the ground, the second is in a window exposed to light and heat, and the third is situated in a dark nook in an iron pot. Although I am of opinion that nests had better be left an open question for the consideration of the hens themselves, I will give my ideas on the subject. Of all materials usually employed in their construction, I think heather or straw the best. Hay is bad, as it soon generates insects of a kind 'not to be mentioned to ears polite.' My own experience is in favor of shallow holes in the floor, loosely lined with a little clean straw, and I have almost invariably found that the largest and strongest broods are hatched on the ground.

**TO PREVENT HENS EATING THEIR EGGS.**—Watch the hen when she goes to nest, and remove the eggs immediately. If this is done for a day or two, she will discontinue the practice. Let there be some bricklayer's rubbish thrown down in their haunts—old ceilings, mortar, &c. Generally speaking, a hen first eats the egg for the sake of the shell. An old remedy was to blow an egg, and fill it with mustard, pepper, ginger, or anything distasteful to the bird, and put it in her way.

**FEEDING POULTRY.**—Professor Gregory, of Aberdeen, in a letter to a friend, observes: "As I suppose you keep poultry, I may tell you that it has been ascertained that if you mix with their food a sufficient quantity of egg shells or chalk, which they eat greedily, they will lay twice or thrice as many eggs as before. A well fed fowl is disposed to lay a large number of eggs, but cannot do so without the materials of the shells, however nourishing in other respects her food may be; indeed, a fowl fed on food and water free from carbonate of lime, and not finding any in the soil, or in the shape of mortar, which they often eat on the walls, would lay no eggs at all with the best will in the world."

**QUALITY.**—In order to give 'quality' to the plumage particularly on special occasions, as a poultry exhibition, boil half a pint of linseed in a quart of water until it is reduced to a pint.—Pour the seed and liquid over as much meal as will absorb it, and give this every other day for a fortnight to your pen of birds, i.e., a cock and two hens.

**KILLING FOWLS**—As fowls are to be killed for the table, it may be as well to point out a merciful way of destroying them—a point on which few concern themselves. Fowls are never bled to death (like turkeys and geese) as, from the loss of blood, the flesh becomes dry and insipid. Poulterers and higglers either strain at the vertebrae of the neck till their dislocation takes place, or produce the same effect by a sudden twist.—The former mode is very cruel; the second plan is more merciful, but is not always skilfully managed, and requires considerable dexterity. The best plan is to take a blunt stick, such as a child's bat or boy's wooden sword, and strike the bird a smart blow at the back of the neck, about the third joint from the head; death follows in a moment.

**POULTRY DUNG.**—Have this regularly swept up every Saturday, packed away in barrels and sprinkled over with plaster. Dana, with force and truth, says: "The strongest of all manures is found in the droppings of the poultry yard." Next year each barrel of it will manure half an acre of land; save it, then, and add to the productive energies of your soil. Don't look upon it as too trifling a matter for your attention; but recollect that the globe itself is an aggregate of small matters.

## THE AGRICULTURE OF PALESTINE

In no part of the civilized world where a productive soil abounds, is the condition of agriculture at a lower ebb than in the country about Jerusalem. The city is largely inhabited by Jews, many of whom are pensioners of their brethren in all the rest of the world. They are miserably poor, indolent, and without employment. The country round about is in possession of the Arabs who hate the Christians much and the Jews more. The Arabs are the worst farmers in the world.

It is supposed by many that the lands of Palestine are generally of the poorest character for the purpose of the husbandman. Nothing could be further from the truth. The country possesses a great diversity of climate, owing to the variation in elevation. The Valley of the Jordan, at that level of the Dead Sea, is 1,312 feet below the Mediterranean, while the Mountain of Lebanon rises above the line of perpetual snow, which is at 9,300 feet above the sea, so that here is eternal winter, while the Valley of the Jordan is a perpetual tropical climate, and between these variations of latitude there are all the varieties of productions of the temperate zones. The soil in general a calcareous, light-colored loam in the interior, particularly near Jerusalem, and near the sea shore it is a dark red loam, and on the plains of Sharon very productive, yielding three crops a year of such things as will ripen within that space. The soil produces good wheat, and corn, oats, potatoes, &c., about equal to the average crops of Connecticut. Cotton has been produced here in quality and product per acre equal to the best upland plantations in the country.



Fruit of various kinds grow to great perfection. The grapes in particular are very superior, while peaches, pomegranates, apricots, plums, olives, figs, oranges, and melons, are rich and abundant.

Altogether, the climate and soil, and the productions, make it a most desirable country for a residence. The rich lands near Jaffa can be bought for a sum equal to about six or eight dollars an English acre.

To all this there is a drawback, which has heretofore deterred settlers from seeking a home there, who know how to appreciate and cultivate such a soil and make the productions profitable and homes in such a climate pleasant and beautiful. The country is in possession of the Arabs, who, in point of civilization, are but a small remove above the wild Indians of this continent.

From time to time missionary efforts have been made in Palestine, both by English and Americans, with one universal degree of success—that was to make no converts, but embitter the bigots against those who were trying to tell them of a better religion than their own.

Two years ago, an effort was made in a new line to ameliorate the condition of the inhabitants of Palestine. Seven Americans, with improved plows and other tools, and American seeds, located upon a piece of land seven miles from Jerusalem, one mile from Bethlehem—and made preparations for farming after the American system.

Their location was in the valley of Artos, upon the very site of one of the gardens of Solomon.

Their friends in the city were much opposed to their going out there to reside, urging them, if they were determined to try to cultivate the soil, to keep their residence in the city, for fear of the Arabs. This did not suit their plans, and they took up their residence upon the land and commenced operations, plowing deep with one of our best plows, harrowing with an iron-toothed harrow, such as was never seen there before, and planted corn, potatoes, beans, peas, oats, barley, wheat, and all sorts of garden vegetables; in short, making a perfect American farm.

The operations, instead of exciting the jealousy of the Arabs, aroused them to a state of surprise, and the news of what the Americans at Solomon's garden were doing, and what wonderful tools they were using, and how peaceable and quiet they were, never saying anything about their religion, flew on the wings of the wind, and visitors came to look and wonder, from far and near. The operations of the carpenter and blacksmith were not among the least sources of wonder. The rapid manner in which he heated his iron, and hammered it into just such shapes as he desired, was beyond the comprehension of simple minded people.

One day the farm received a visit from twenty-five Sheiks, who inspected all the tools and the way they were used, and the effect produced, and looked at the growing crops, so much beyond any thing they had ever seen produced before, and then turned their heads together to consult upon the wonders they had witnessed. The conclusion was that these people must possess a very superior kind of religion, as that is the standard

upon which they base all their estimates of character. They made applications at once for several of their sons to serve as apprentices to learn American farming, and did not even object that they should be taught the principles of American religion, as these are very good people, and God blesses their labor beyond any other in all Palestine.

It would have been dangerous now for any one to molest the American farmers, since they had all the Sheiks and principal men in the country on their side, and anxious for their success and influence. The Jews, too, began to think it would be better for them to cultivate such a fruitful soil than starve in the city, as many of them have done, and they began to apply for situations as laborers, notwithstanding the priests always taught them that it was derogatory to the notional character of the Hebrews to till the soil. Though, if they had undertaken it by themselves, they would not have been permitted by the Arabs, who hunt them as they would wild beasts.—But, under the protection of American farmers, the Arabs will permit them to labor, and it is now a matter of serious discussion among those who know of the success of this enterprise, whether the most feasible plan for colonizing the Jews in Palestine is not to make them cultivators of its rich soil.

Owing to some difficulty which arose in regard to the title of the land, they commenced upon in the Valley of Artos, the little colony moved last year to the Plains of Sharon, where they have got a permanent location, and the number consists now of ten Americans, male and female, and two Germans.—*N. Y. Tribune.*

#### THE FARMER'S WEATHER-OMETER!

*Comprising General Indications and Local predictions respecting the Changes of Weather, gathered during Travels in America and Europe.*

BY A. RURALIST.

"A rainbow in the morning  
Is the Shepherd's warning;  
But a rainbow at night  
Is the Shepherd's delight!"

A rainbow in fair weather denotes foul—if in foul, fair weather will follow. A double rainbow indicates much rain.

A predominance of the purple color of the rainbow, shows wind and rain—dark red, tempest—light red, wind—yellow, dry weather—green, rain—blue, denotes that the air is clearing.

If the *Aurora Borealis* appear after several warm days, it is generally succeeded by a coldness of air. If the *Aurora Borealis* has been considerable, either an increased degree of cold is immediately produced, or bodies of clouds are immediately formed.

If, in a very wet season, the sky is tinged with a sea-green color, near the bottom, where it ought to be blue, it shows that rain will speedily follow, and increase; when it is of a deep dead blue, it is overcharged with vapors, and the weather will be showery.

When the sun appears white at the setting, or goes down into a bank of clouds, which lie in the horizon, they indicate the approach or continuance of bad weather.

When it rains with an east wind, it will probably continue for twenty-four hours.

The heaviest rains, when of long continuance, generally begin with the wind blowing easterly, which gradually veers round to the south—and the rains do not cease until the wind has got to the west, or a little north-west.

While rain is falling, if any small space of the sky is visible, it is almost a certain sign that the rain will speedily cease.

If the clouds that move with the wind become stationary, when they arrive at that part of the horizon which is opposite to the wind, and appear to accumulate, they announce a speedy fall of rain.

A frequent change of wind, with an agitation on the clouds, denotes a sudden storm.

A fresh breeze generally springs up before sunset, particularly in the summer.

The weather usually clears up at noon—but, if it rain at midnight, it seldom clears up till sunset.

The winds which begin to blow in the day time are much stronger, and endure longer than those which begin to blow only in the night.

\* A hollow or whistling wind denotes rain.

If the wind follow the course of the sun, fair weather will follow.

Weather, either good or bad, which takes place in the night time, is not generally of long duration—and, for the most part, wind is more uncommon in the night than in the day time. Fine weather in the night with scattered clouds, does not last.

Violent winds prevail more in the vicinity of mountains, than in open plains.

A Venetian author says—"A sudden storm from the north does not last three days."

If it thunders in December, moderate and fine weather may be expected.

If it thunders at intervals, in the spring time before the trees have acquired leaves, cold weather is still to be expected.

Thundering in the morning, denotes wind at noon—in the evening, rain and tempest.

In the summer if there be no thunder, the ensuing fall and winter will be sickly.

If it lightens on a clear star-light night, in the south or south-east, rain and wind will follow—if it lighten in an evening towards the north, south, or south-west, it indicates wind.

Hot weather generally precedes thunder, which is followed by cold showery weather.

When the wind is south-west during summer or autumn, and the temperature of the air is unusually cold for the season, both to the feeling and the thermometer, with a low barometer, much rain is to be expected.

Violent temperature, as storms of great rains, produce a sort of crisis in the atmosphere which produces a constant temperature, good or bad, for some months.

In a morning, if a mist which hangs over the

lowlands, draws towards the highlands, it is a sign of an approaching fine day.

If in the evening a white mist spreads over a meadow through which a river flows, it will be drawn up by the sun in the following morning, and a fine clear day will follow.

When the dew lies plentiful upon the grass after a fine day, another fine day may be expected; but if, after such a fine day, no dew fall nor any breeze be stirring, it indicates that the vapours are ascending, and will soon be precipitated in the form of rain.

It is certainly a surprising phenomenon to see the earth, after a very long and abundant rain to be sometimes almost dry, the roads quite free from dirt, and the lands to become quite arid and parched. This is a sign that the rain has not altogether ceased, and denotes a continual efflux of electric matter, which, being renewed, carries with it, in the form of vapours, all the moisture that falls on the earth. There is sometimes, however, a great deal of dirt, even after a very moderate rain, which, in that case, is a sign of fair weather, because it indicates that evaporation has ceased. Dry earth and moist stones announce rain.

If the flame of a lamp crackles or flares, it indicates rainy weather. The case is the same when soot detaches itself from the chimney and falls down.

It is a sign of rain when the soot collected around pots or kettles takes fire, in the form of points like grains of millet, because this phenomenon denotes that the air is cold and moist.

If the coals seem hotter than usual, or if the flame is more agitated, though the weather be calm at the time, it indicates wind.

When the flame burns steady, and proceeds straight upwards, it is a sign of fine weather.

If the sound of bells be heard at a great distance, it is a sign of wind, or of a change of weather.

The hollow sounds of forests, the murmuring noise of the waves of the sea, their foaming, and green and black colour, announces a storm.

Good or bad smells, when usually strong, seeming as if they were condensed, are a sign of change of weather, either because exhalations arise and are dispersed in more abundance which is a sign of elasticity,—or because the air does not dispel or raise these exhalations, which indicates that the constitution of the atmosphere is motionless, light, and void of elasticity.

When the spider's web and the leaves of trees are agitated without any sensible wind, it is a sign of wind, and perhaps of rain, because it denotes that strong and penetrating exhalations arise from the earth. These signs are less equivocal, when the dry leaves and chaff are raised into a vortex, and carried into the air.—*Ohio Cultivator*.

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How to PETRIFY WOOD.—Take equal quantities of rock alum, white vinegar, calx and pebble-powder. Mix all together, and when the effervescence subsides, throw in the wood or other porous substance, and let it soak for four or five days, when the petrefaction will be complete.



## Natural History.

### THE OX—HISTORY, MANAGEMENT, &c.

#### THE SHORT-HORNS.

Of the breeders contemporaneous with the Collings, the most prominent were Sir Henry Vane Tempest, Col. John Trotter, and Mr. Mason. These gentlemen all derived their animals to commence with from the Ketton and Barmpton herds; Sir Henry's and Col. Trotter's being entirely from Robert Colling. It was the singular fortune of the Colonel, to sell three cows to Col. Melish for 2100 guineas, (£2210) a high evidence of the superiority of his breeding, and the excellence of his cattle. Col. Melish resold one of the three to Major Bower for 800 guineas. This was just twice the price of the highest of the cows in Charles Colling's sale. Col. Trotter bred that very superior bull Baron, (58) sold to Mr. Duncomb at a very high price. He was used with great success by Mr. Duncomb.

Mr. Mason was coeval nearly with the Collings, and continued breeding until 1829, when he sold, and his herd realized great prices. The leading purchaser was Lord Althorp, (afterwards Earl Spencer), who reared a large and valuable stock from this source, which numbered about 150 when he died; they were by his legatee, Mr. Hall, sold for very great prices, one bull reaching 400 and another 370 guineas, and some cows going to 200 guineas.

Sir Henry Vane Tempest, of Wynyard, was clearly the leading breeder other than the Collings, during the period of the existence of the Ketton and Barmpton herds; and so far as permanent influence on the present short-hornus is concerned, the best breeder. He commenced by the purchase from Robert Colling of a cow of his very extraordinary Princess tribe. From her are descended the famous and unsurpassed tribe of the Princess family, so distinguished in this day; and which is now, in its pure state, in England, solely in the possession of Mr. John Stephenson, of Wolviston, county of Durham.\* Sir Henry died in 1813, and his widow, the Countess of Antrim, continued the Wynyard herd till 1818, when she sold off her cattle. At her sale Mr. Stephenson purchased the cow Angelina, of the Princess family, and from her he has reared his present herd of that tribe, of which his cattle wholly consists.

Of the breeders of the *present day*, Mr. Stephenson and Mr. Bates of Kirkleavington, are more distinguished for the high style and quality of their cattle than any others in England. As a bull breeder, Mr. Stephenson has no equal. Mr. Bates commenced his breeding with the Duchess tribe, the last of which, owned by C. Colling, he bought, and until his death in 1849, it remained wholly in his possession. It has now been distributed at very large prices. Mr. Bates resorted to Mr. Stephenson's blood, and through Mr. Ste-

phenson's bull Belvedere, (1706) greatly improved his short-horns. His prominent prize animals were got by Belvedere.

The Yorkshire cow, which now almost exclusively occupies the London dairies, is an unanswerable proof of the possibility of uniting the two qualities, fatting and milking, perfectly, *but not at the same time*: they succeed to each other, and at the periods when it suits the convenience of the dairyman that they should. Years ago the Yorkshire cow was, compared with other breeds, as great a favorite in the London market as at present. She yielded more milk, in proportion to the quantity of food consumed, than could be obtained from any other breed; but when the dairyman had had her four or five years, she began to fall off, and he dried her and sold her. It took a long time to get much flesh upon her; and when he calculated the expense of getting her into condition, he found that his cheapest way was to sell her for what she would fetch, and that seldom exceeded £5.

By degrees, however, the more intelligent of the breeders began to find that, by cautiously adopting the principle of selection—by finding out a short-horn bull whose progeny were generally milkers, and crossing some of the old Yorkshires with him—but still regarding the milking properties of the dam, and the usual tendency to possess these qualities in the offspring of the sire,—they could at length obtain a breed that had much of the grazing properties of the short-horn in the new breed, and retained, almost undiminished the excellences of the old breed for the pail. Thence it has happened that many of the cows in the London dairies are as fine specimens of the improved short-horns as can possibly be produced. They do not, perhaps, yield *quite* so much milk as the old ones, but what they do yield is of better quality; and whether the dairyman keeps them a twelvemonth or longer—and this is getting more and more the habit of these people—or whether he milks them for three or four years, as soon as he dries them, they fatten as rapidly as the most celebrated of the high bred short-horns.

We give a fair specimen of these cows: the character of the Holderness and the short-horn beautifully mingling. A milch cow good for the pail as long as wanted, and then quickly got into marketable condition, should have a long and rather small head; a large-headed cow will seldom fatten or yield much milk. The eye should be bright, yet peculiarly placid and quiet in expression; the chaps thin and the horns small.—The neck should not be so thin as common opinion has given to the milch cow. It may be thin towards the head; but it must soon begin to thicken, and especially when it approaches the shoulder. The dewlap should be small; the breast, if not so wide as in some that have an unusual disposition to fatten, yet very far from being narrow, and it should project before the legs; the chine, to a certain degree fleshy, and even inclining to fulness; the girth behind the shoulder should be deeper than it is usually found in the short-horn; the ribs should spread cut wide, so as to give as round a form as possible to

\* The only other persons possessing females of this blood in its pure state, are Colonel Sherwood and Ambrose Stevens, of New York. They derived theirs from Mr. Stephenson, and in 1849 and '50 imported eight heifers and cows from him.

the carcass, and each should project farther than the preceding one to the very loins, giving, if after all the milch cow must be a little wider below than above, yet as much breadth as can possibly be afforded to the more valuable parts. She should be well formed across the hips and on the rump, and with greater length there than the milker generally possesses, or if a little too short, not heavy. If she stands a little long on the legs, it must not be too long. The thighs somewhat thin, with a slight tendency to crook-

edness in the hock, or being sickle-hampered behind; the tail thick at the upper part, but tapering below; and she should have a mellow hide, and little coarse hair. Common opinion has given to her large milk-veins; and although the milk-vein has nothing to do with the udder, but conveys the blood from the fore part of the chest and sides to the inguinal vein, yet a large milk-vein certainly indicates a strongly developed vascular system—one favorable to secretion generally, and to that of the milk among the rest.



THE YORKSHIRE COW.

The last essential in a milch cow is the udder, rather large in proportion to the size of the animal, but not too large. It must be sufficiently capacious to contain the proper quantity of milk, but not too bulky, lest it should thicken and become loaded with fat. The skin of the udder should be thin, and free from lumps in every part of it. The teats should be of moderate size; at equal distances from each other every way; and of equal size from the udder to nearly the end, where they should run to a kind of point. When they are too large near the udder, they permit milk to flow down too freely from the bag, and lodge in them; and when they are too broad at the extremity, the orifice is often so large that the cow cannot retain her milk after the bag begins to be full and heavy. The udder should be of nearly equal size before and behind, or, if there be any difference, it should be broader and fuller before than behind.

The quantity of milk given by some of these cows is very great. It is by no means uncommon for them, in the beginning of the summer, to yield 30 quarts a day; there are rare instances of their having given 36 quarts; but the average may be estimated at 22 or 24 quarts. It is said that this milk does not yield a proportionate quantity of butter. That their milk does not contain the same proportionate quantity of butter as that from the long-horns, the Scotch cattle, or the

Devons, is probably true; but we have reason to believe that the difference has been much exaggerated, and is more than compensated by the additional quantity of milk. The prejudice against them on this account was very great, and certain experiments were made, by the result of which it was made to appear that the milk of the Kyloe cow yielded double the quantity of butter that could be produced from that of the short-horn. Two ounces were obtained from the milk of the Kyloe, and one from that of the short-horn.

This aroused the advocates of the short-horns, and they instituted their experiments, the result of which was much less to the disadvantage of the breed. Mr. Bailey, in his survey of Durham, gives an account of an experiment made by Mr. Walton of Middleton.

He took from his dairy six cows promiscuously, and obtained the following quantity of butter from a quart of the milk of each of them:—

No. 1, 3 oz. 6 dwts.; No. 2, 1 oz. 6 dwts.; No. 3, 1 oz. 12 dwts.; No. 4, 1 oz. 10 dwts.; No. 5, 1 oz. 14 dwts.; No. 6, 1 oz. 6 dwts.; Total, 10 oz. 8 dwts.; which, divided by 6, leaves nearly 1 oz. 14 $\frac{2}{3}$  dwts., or about  $\frac{7}{8}$  of the weight of butter from the milk of a short-horn that the same quantity of milk from a Kyloe yielded.—Then, the increased quantity of milk yielded by the short-horn gave her decidedly the preference, so far as the simple produce was concerned.



This experiment brought to light another good quality in the short-horn, which, if not altogether unsuspected, was not sufficiently acted upon—that she improved as a dairy cow as she got older. The cow, a quart of whose milk produced more than 3 oz. of butter, was six years old, the other five were only two years old; the experiments proved that her milk was richer at 6 years old, than it had been at two. This deserves investigation.

Another circumstance is somewhat connected with such an inquiry. The Kyloe and the long-horn cattle seem to care little about change of situation and pasture; but the short-horn is not so easily reconciled to a change; and her milk is not at first either so abundant or so good as it afterwards becomes.

There is a great difference in the quantity of food consumed by different breeds of cattle, and that the short-horns occupy the highest rank among the consumers of food is evident enough; but we never could be persuaded that the difference of size in the same breed made any material difference in the appetite, or the food consumed. When they stand side by side in the stall or cow-house, and experience has taught us the proper average quantity of food, the little one eats her share, and the larger one seldom eats more, even when it is put before her. There are occasional differences in the consumption of food by different animals, but these arise far oftener from constitution, or from some unknown cause, beyond the possibility of doubt, that the larger cattle, the breed and other circumstances being the same, yield the greatest quantity of milk.

Experience has also proved another thing—that the good grazing points of a cow, and even her being in a fair store condition, do not necessarily interfere with her milking qualities. They prove that she has the disposition to fatten about her, but which will not be called into injurious exercise until, in the natural process of time, or designedly, she is dried. She will yield nearly as much milk as her unthrifty neighbor, and milk of a superior quality, and at four, five, or six years old, might be pitted against any Kyloe, in the quality of her milk, while we have the pledge that it will cost little to prepare her for the butcher, when done as a milker. On this principle many of the London dairymen now act, when they change their cows so frequently.

The following observations were made by Mr. Calvert, of Brampton, on the quantity of butter yielded by one of his short-horns. The milk was kept and churned separately from that of the other stock, and the following is the number of pounds of butter obtained in each week: 7, 10, 10, 12, 17, 13, 13, 13, 15, 16, 15, 12, 13, 13, 13, 14, 14, 13, 12, 12, 13, 11, 12, 10, 10, 8, 10, 9, 10, 7, 7, 7.

There were churned 373 pounds of butter in the space of 32 weeks. The cow gave 28 quarts of milk per day, about midsummer, and would average nearly 20 quarts per day for 20 weeks.

#### LINCOLNSHIRE.

There is a large, coarse short-horn prevailing, particularly in Lincolnshire, denominated in the quotations of the Smithfield markets "Lincolns," but they have no further affinity with the im-

proved short-horns than as the latter have been referred to for their improvement, which has been accomplished to a considerable degree.

Breeders, with judgment, called in the aid of the short-horn, and speedily and effectually completed their object. They took away the disposition to make lean beef only, although in very great quantities; and if they could not perfectly give to the Lincolns their own early maturity, they materially quickened the process of fattening.

An improved Lincolnshire beast is therefore now a very valuable animal; and if a finer grain could be given to the meat, his great quantity of muscle, compared with that of fat, would be no disadvantage.

#### THE ALDERNEYS.

The Normandy cattle are from the French continent, and are larger and have a superior tendency to fatten; others are from the islands of the French coast; but all of them, whether from the continent or the islands, pass under the common name of Alderneys.

They are found mainly in gentlemen's parks and pleasure-grounds, and they maintain their occupancy there partly on account of the richness of their milk, and the great quantity of butter which it yields, but more from the diminutive size of the animals. Their real ugliness is passed over on these accounts; and it is thought fashionable that the view from the breakfast or drawing-room of the house should present an Alderney cow or two grazing at a little distance.

They are light red, yellow, dun or fawn-colored; short, wild-horned, deer-necked, thin, and small boned; irregularly, but often very awkwardly shaped.

Mr. Parkinson, who seems to have a determined prejudice against them, says that "their size is small, and they are of as bad a form as can possibly be described; the bellies of many of them are four-fifths of their weight; the neck is very thin and hollow; the shoulder stands up, and is the highest part; they are hollow and narrow behind the shoulders; the chine is nearly without flesh; the hucks are narrow and sharp at the ends; the rump is short, and they are narrow and light in the brisket." This is about as bad a form as can possibly be described, and the picture is very little exaggerated, when the animal is analyzed point by point; yet all these defects are so put together, as to make a not unpleasing whole.

The Alderney, considering its voracious appetite—for it devours almost as much as a short-horn—yields very little milk. That milk, however, is of an extraordinarily excellent quality, and gives more butter per quart than can be obtained from the milk of any other cow. Some writers on agricultural subjects have, however, denied this. The milk of the Alderney cow fits her for the situation in which she is usually placed, and where the excellence of the article is regarded, and not the expense: but it is not rich enough, yielding the small quantity that she does, to pay for what she costs. On the south coast of England, there is great facility in obtaining the Alderney cattle, and they are great favorites there.



THE ALDERNEY COW.

One excellence it must be acknowledged that the Alderneys possess; when they are dried, they fatten with a rapidity that would be scarcely thought possible from their gaunt appearance, and their want of almost every grazing point, while living.

Some have assigned to the Norman or Alderney cattle a share in the improvement of the old short-horns; but the fact does not rest on any good authority.

#### EAST INDIAN CATTLE.

Several varieties of these have been imported, and attempts made to naturalize them, but with varied success, and among them the Nagore cattle.

They are used in India by the higher orders, to draw their state carriages, and are much valued for their size, speed, and endurance, and sell at very high prices.



THE NAGORE BULL.

They will travel, with a rider on their back, fifteen or sixteen hours in the day, at the rate of six miles an hour. Their action is particularly fine—nothing like the English cattle, with the sideway, circular action of their hind legs. The

Nagore cattle bring their hind legs under them in as straight a line as the horse. They are very active, and can clear a five-barred gate with the greatest ease.



## Editorial, &c.

G. BUCKLAND, ESQ., EDITOR.

H. THOMSON, ESQ., ASSISTANT EDITOR.

### HINTS FOR THE MONTH.

The sowing of fall wheat should, as a general thing, be completed in all parts of Upper Canada before the close of September. This important operation, therefore, cannot be safely deferred, except on very rich soils and in dry and warm situations, till the present number reaches the hands of our subscribers. In consequence of the heavy showers that have fallen for the last two or three weeks, wheat-sowing has been effected under favorable circumstances, and the grain in many places already indicates a strong and healthy germination. Where the soil has not been too hard to work, and proper attention has been paid to the draining and pulverising of it, its condition for the reception of the seed, after so long and intense a drought as this continent has generally experienced, must be regarded as highly favorable to the promotion of next year's crop.

It is of importance to bear in mind, when dealing practically with the wheat plant, that one of its principal and most common enemies is stagnant water, so frequently seen in low parts of fields during spring and autumn. Of course in a country recently recovered from the forest it is unreasonable to expect such a surface and drainage as characterise countries which have been subjected to cultivation for centuries. Still, many of our farmers might do much more towards securing and increasing their crops by a little timely attention to inexpensive draining, than is commonly practised. Presuming that the soil sown with wheat has been properly cleaned and laid up into ridges in a workmanlike style, leaving the furrows sufficiently deep and open to carry off most of the superfluous water, under ordinary circumstances, yet how often does it occur in practice that certain low portions of the field are partially inundated for many days together after heavy and continued rains. Much of this evil may readily be mitigated, if not wholly removed, by ordinary attention to the making of cross-furrows of sufficient depth to

meet the exigencies of each particular case. It is a practice to be recommended after the field has been sown, even in the best style of management, to walk over it after the first heavy rain, and with a spade give vent to all pent up water. A few inches deepening of an ordinary furrow, or a slight cross cut for a few feet will often be found sufficient to relieve a considerable area, in which the seed must otherwise have perished.

This is the season too, when the farmer, after having got through the hurry and fatigues of summer work, and consigned to the bosom of Mother Earth the germs of a future harvest, can look around him, and plan and execute work of general and permanent improvement. At the basis of all such improvement in wet lands, is *efficient draining*—an operation that may be advantageously carried on through this and the succeeding month; and in some seasons and situations, even later. By efficient draining is meant the entire removal of all stagnant and therefore injurious water from the farm by improving the natural outfall, where necessary, and the making of open ditches and covered drains of sufficient depth, communicating therewith.—If only the natural drainage of farms was improved and a few deep ditches cut so as to intersect the lowest and wettest places, the benefit that would result would appear to those inexperienced in such matters truly astonishing. We say then to our readers, drain as well and as fast as you can, and lose not a day in making a commencement in right earnest. Of course as practical and judicious men, the style and extent of the work will depend on your means and local requirements.

The harvesting of root crops will now require attention. Many kinds of potatoes, Swede turnips and mangel wurzel are yet, owing to the late rains, in a very growing state. Early sorts of potatoes should now be lifted, and well exposed to the air and sun before being put into pits or otherwise stowed away. In pitting turnips, mangels, carrots, &c., in the open air, care is necessary not to cover them too thickly with earth, and to allow room through the top of the heap for the escape of the products of evaporation. From inattention to this precaution, many

valuable heaps of roots become rotten and useless. There is, even in this climate, more danger to be apprehended from a too thick air-tight covering than from frost. A storehouse of well preserved roots is indeed to the stock breeder a most valuable acquisition; a few turnips or carrots in early spring will often prove the means of preserving animals in a healthy and growing state, which would otherwise be exposed to the many evils resulting from short commons, or it may be absolute starvation.

Fall ploughing can now be advantageously proceeded with, and on stiff soils, when well executed, and the largest amount of surface exposed to the frost, it is a beneficial practice. The procuring of firewood, repairing fences, threshing and marketing of grain, and preparing winter quarters for stock, are the principal seasonal duties of the agriculturist.

#### LOWER CANADA EXHIBITION.

The second Exhibition of the Lower Canada Agricultural Association was held at Quebec on the 13th and 14th of September. The writer paid a visit to the grounds on the 12th, but was obliged to leave for Upper Canada before the Exhibition had fully opened. We cannot therefore speak of it as a whole, from personal knowledge, but what we *did* see, led to the conviction that agriculture in the neighborhood of Quebec is still in a backward condition. We noticed some excellent Horses of the Canadian breed, and a few good Durhams. The latter would have been considered "nothing to boast of" at one of our Township Shows. The Montreal District, which is far ahead of that of Quebec in agricultural improvement, contributed very little to the Exhibition, although communication by the river steamers is not expensive or hazardous. The Eastern Townships, also far ahead of Quebec and its vicinity, added but little to the Show. We need not therefore wonder at its deficiencies. The season has not been favorable to root crops, but the show of potatoes equalled, if it did not surpass, any we remember to have seen in Upper Canada. Turnips, Beets, Carrots, &c., were small and "rooty." In the Horticultural department we noticed some excellent spe-

cimens. The Cauliflower was of most tempting aspect, and the display of Apples, Plums, &c., though not large, was very choice. We believe the best collection was from the neighborhood of Montreal.

The IMPLEMENTS were very inferior. Perhaps this department was improved by the additions made subsequent to our visit, but the ploughs, harrows, &c., exhibited on the first day, would not have been deemed worthy of a 3rd prize at an Upper Canada County Show. We think the Lower Canada Board of Agriculture should take some special means to introduce improved implements among the *habitans* of Quebec District.

The show of POULTRY was the best part of the Exhibition. Mr. J. W. Platt of New York, and Mr. Peacock of Montreal were the principal exhibitors. Shanghai and Cochin China, and all the fashionable varieties were well represented.

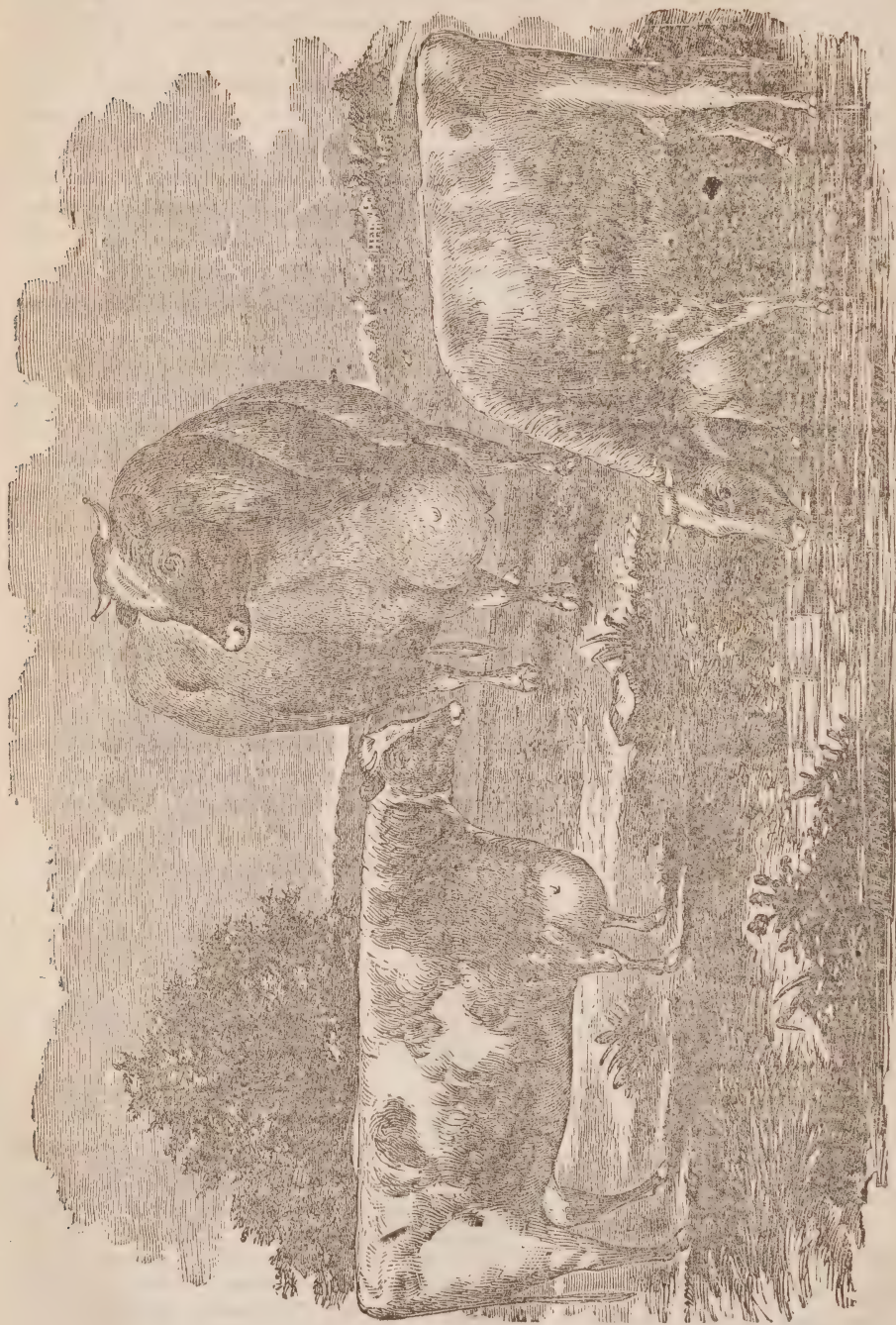
The FINE ARTS made a poor display. We were somewhat surprised at the small number of contributions to this department. One would suppose that the long winters of Quebec would be favorable to the indulgence of artistic taste. How do the daughters of the rich spend their weary hours?

NAVAL ARCHITECTURE is of course a popular study at Quebec. The models exhibited were numerous, and attracted the notice of the curious in such matters.

The show of FURS was not large, but very suggestive of the dangers to which fingers, ears, &c., are exposed in that rigorous climate. FURNITURE and Cabinet work made a poor show as to quantity, but very fair as to quality.

The buildings and arrangement of the grounds gave evidence of skill and liberal expenditure on the part of the Committee, but we think they must have felt, from the little interest excited among the farmers, that their efforts have been greater than the results. We believe, however, that Lower Canada is making progress in agriculture as well as in other branches of industry, and though her "Provincial Shows" may for some years to come be inferior to those of the Upper Province, they will undoubtedly improve, and justify the liberal grants the Legislature has made for that purpose.





AGATE.

HALTON.

FRANTIC.

MR. CHAPMAN'S SHORT-HORN BULL "HALTON," AND IMPORTED HEIFERS "AGATE" AND "FRANTIC."

**MR. CHAPMAN'S HERD OF SHORT-HORNS.**

We have much pleasure in presenting our readers with an engraving of Mr. Chapman's celebrated bull, *Halton*, and his two recently imported heifers, *Agate* and *Frantic*. *Halton* is well known to many of our reader, as he was formerly owned by the Hon. Adam Fergusson, whose present herd is indebted for much of its superior excellence to the blood derived from this splendid animal. Mr. Fergusson took the first premium for *Halton* in the class of Foreign Stock at the New York State Exhibition, in 1851. *Agate* and *Frantic* are from Bates's celebrated family of Short-Horns, *Duchess*,—a race of animals representing the most perfect type of the Improved Durham, and standing altogether unrivalled.

Mr. Chapman has for some years spared neither time nor expense in this important department of Rural Economy, and his present herd cannot, perhaps, be surpassed by any other on this continent. As some of our readers may feel a desire to see for themselves, we will only add, that Mr. Chapman's residence is at Clockville, Madison County, N. Y., between Syracuse and Utica, six miles from Canastota Station, on the New York Central Railway.

Annexed are full pedigrees of the above mentioned animals, and some others of Mr. Chapman's Herd, copied from the Register of Thorough-bred Stock, in the *Wool Grower* :—

**BULLS.—SHORT-HORNS.**

*HALTON*, (11,552.)

Red roan, calved August 22, 1847, bred by Geo. Vail, Esq., of Troy, N. Y., the property of S. P. Chapman, Mount Pleasant Farm, Clockville, Madison Co., N. Y.; got by Meteor 104, (11811) dam [Lady Barrington 3d.] by Cleveland Lad, (3407) g. d. [Lady Barrington 2d] by Belvedere (1706) gr. g. d. [Lady Barrington] by a son of Herdsman, (304)—[Young Alicia] by Wonderful (700)—[Alicia] by Alfred (23)—by Young Favorite (6994.)

**COWS.—SHORT-HORNS.**

*AGATE.*

Roan, calved Dec. 6, 1850, bred by Robt. Bell, Mosbro' Hall, Rainford, Lancashire, England, the property of Geo. Vail, of Troy, N. Y., and S. P. Chapman, Mount Pleasant Farm, Clockville, Madison Co., N. Y.; got by Third Duke of York (10166,) dam [Annie] by Second Cleveland Lad, (3408) g. d. [Annabella] by Duke of Cleveland, (1937) gr. g. d. [Acomb] by Belvedere (1706)—a cow bought of Mr. Bates.

*FRANTIC.*

Roan, calved September 3, 1850, bred by Robt. Bell, Mosbro' Hall, Rainford, England, the property of Geo. Vail, Troy, N. Y., and S. P. Chapman, Mount Pleasant Farm, Clockville, Madison Co., N. Y.; got by Fourth Duke of York (30167) dam [Faith] by Fourth Duke of Northumberland, (3649) g. d. [Fidget] by Second Earl of Darlington, (1945) gr. g. d. [Fletcher] by a son of Young Wynward, (2859)—descended from J. Brown's Old Red Bull, (97.)

*BRIGHT EYES III.*

Red, calved June 23, 1850, bred by Robt. Bell, Mosbro' Hall, Rainford, England, the property of Geo. Vail, Troy, N. Y., and S. P. Chapman, Mount Pleasant Farm, Clockville, Madison Co., N. Y.; got by Earl Derby (10177) dam [Bright Eyes 2d] by Lord George Bentinck (9317) g. d. [Bright Eyes] by Conqueror, (6885) gr. g. d. by Son of Bearl (65)—by Mason's Son of Comet (155)—by Wellington, (683.)

*DUCHESS.*

White, calved June 25, 1849, bred by S. P. Chapman, Mount Pleasant Farm, Clockville, Madison Co., N. Y.; got by Duke of Wellington 55, (3654) dam [Matilda] by White Jacket, (5647) g. d. [Hart] imported.

*DUCHESS II.*

White, calved May 24, 1852, bred by S. P. Chapman, the property of Wm. P. Lownsbury, Fenner, Madison Co., N. Y.; got by Meteor 104, (11811) dam [Duchess] by Duke of Wellington 55, (3654), &c., &c.

*DUCHESS III.*

White, calved May 13, 1853, bred by S. P. Chapman, the property of Cooper Sayre, Oaks Corners, Ontario County, N. Y.; got by *Halton*, (11552) dam [Duchess] by Duke of Wellington 55, (3654) &c., &c.

*DUCHESS IV.*

Red roan, calved March 24, 1854, bred by S. P. Chapman, the property of R. D. Palmer, Clinton, Lenawee Co., Michigan; got by *Halton*, (11552) dam [Duchess] by Duke of Wellington 55, (3654) &c., &c.

*COMET.*

Roan, calved June 13, 1849, bred by S. P. Chapman, Mount Pleasant Farm, Clockville, Madison Co., N. Y., the property of R. Wade, Canada West; got by Buena Vista, dam [Ruby] by Symmetry 166, (12170) g. d. [Wiley 3d] by Mars, gr. g. d. [Young Willey] by York,—[Old Willey] imported.

**FIRE KINDLERS.**—Take a quart of tar, 3 lbs. of rosin, melt them, bring to a cooling temperature, mix with as much saw-dust with a little charcoal added, as can be worked in; spread out while hot upon a board; when cold, break up into lumps of the size of a large hickory nut; and you have at a small expense, kindling material enough for a household one year. They will easily ignite from a match, and burn with a strong blaze, long enough to start any wood that is fit to burn.



## LORD DUNDONALD.

The Earl of Dundonald, better known as Lord Cochrane, has just taken out a patent in the United States for a composition of asphaltum for the covering of telegraphic wires, and for the making of foundations for piers and light-houses; for the preservation of all wood under water; for the making of pipes, tanks, &c. Since the introduction of the electric telegraph in the United States, it has been found impracticable in certain states of the atmosphere to transmit intelligence along the wires from their exposure to atmospheric influences. By the Earl's invention this difficulty is removed, and an important desideratum effected in the art of telegraphing, as the substance employed completely insulates the wires, which will be carried underground, instead of being, as at present, stretched on high poles—thus being more efficient, much more secure from injury, and getting rid of the inconvenience of poles and wires in public thoroughfares. The composition is indestructible, and can be supplied at little more than half the cost of anything previously used. We believe Lord Dundonald is now about in his 80th year; an early riser, hale, active, and hearty! We hope he will live yet many years to grace his order, use his vigorous intellect for the benefit of his country and humanity at large, and remain a proof that a man is less likely to wear out than rust out.

## SALE OF LIVE STOCK, &amp;c.

We would direct the attention of our numerous readers to the advertisement on another page of the sale of Cattle, Sheep, Horses, &c., at the residence of Mr. JOHN CADE, Oshawa, on the 25th and 26th October. We have every reason to believe that Mr. Cade has been very successful in the improvement of his Stock, and that the present sale presents a favorable opportunity to persons desirous of improving in this important department of Agriculture. The terms are liberal.

## NATIONAL EXHIBITION OF CATTLE.

## U. S. AGRICULTURAL SOCIETY.

At a meeting of the Executive Committee of the UNITED STATES AGRICULTURAL SOCIETY, held in the City of Washington, in February last, it was resolved that the Society would hold no Exhibition in any State having a State Agricultural Society, without the assent of the Officers, or of the Executive Committee of such Society.

The citizens of Springfield, Ohio, having requested this Society to hold an Exhibition of Cattle, at that place, during the current year, and generously subscribed about *ten thousand dollars* to defray all the expenses of the same, and to guarantee the Society against loss; and the Executive Committee of the Ohio Agricultural Society uniting in the request, the Executive Committee of this Society have concluded to hold a NATIONAL SHOW OF CATTLE, open to general competition; without sectional limit, on the 25th, 26th, and 27th days of OCTOBER next, at SPRINGFIELD, in the State of Ohio; to which members of the U. S. Agricultural Society will be admitted free of charge.

The friends of Agriculture in all the States of the American Union, and in the neighboring provinces of Canada, are invited to co-operate with us, so that this Exhibition may be the more extensively useful, and be alike creditable to the generous citizens of Springfield with whom it originated—to the Contributors and Visitors, who sustain it—and to the United States Agricultural Society, who are so deeply interested in its success.

In consequence of the holding of this Show of Cattle, the contemplated Exhibition of Horses, at Springfield, Mass. and the Show of Sheep, in Vermont, will be omitted.

The Journal of the Society, which the Executive Committee have concluded to issue once in each year—four numbers in one—will appear in January next; and will contain the Transactions of the Society at its Annual Meeting, the Lectures and Addresses delivered at that time, a full and faithful account of the Springfield Show, with other valuable papers, by eminent members. This volume will be forwarded to all Members who have paid their annual assessments for the year 1854.

MARSHALL P. WILDER, *President*.

WILLIAM S. KING, *Secretary*.

Boston, August, 1854.

## Literary and Miscellaneous.

### POETRY.

#### "SPEED THE PLOUGH."

See how the shining share  
Maketh earth's bosom fair,  
Crowning her brow!  
Bread in its furrow springs,  
Health and repose it brings,  
Treasures to unknown kings—  
God speed the plough!

Look in the warrior's blade,  
While o'er the tented glade  
Hate breathes its vow,  
Wrath its unshathing wakes,  
Love at its lightning quakes,  
Weeping and woe it makes—  
God speed the plough!

Ships o'er the deep may ride,  
Storms wreck their bannered bride,  
Waves whelm their plow;  
But the well-loaded wain,  
Garnishing the golden grain,  
Gladdens the household train—  
God speed the plough!

Who are the truly-great?—  
Minions of pomp and state,  
Where the crowd bow?  
Give us hard hands and free,  
Culturers of field and tree,  
Best friends of liberty—  
God speed the plough!

### EDUCATION ANALYSED.

BY MRS. M. F. H. THOMAS.

#### CHAPTER III.

*Physiology*, or the knowledge of our physical selves: *Metaphysics*, or the science of mind: and *Hygiene*, or the adoption of the outer world to our natures, lie at the basis of, if they do not in fact comprehend, all knowledge.

*Physiology*—Mind is a force acting through a medium, and modified in its action by the conditions of that medium—the natural organism.—Both are governed by fixed laws, and therefore, if mind acts through matter—through the organism—in its normal or healthy condition, in a certain manner, in an abnormal or unhealthy condition, the action must be modified,—for every cause must produce its proper effect. Hence, if the body be unhealthy, the mind must produce unhealthy manifestations—must have a diseased action. Experience, as well as philosophy, teaches the same fact. It is well known and confessed by all, that diseases of the brain effect the mind, and that compression of its substance produces insensibility. It is also well known, that disease of any part of the body deranges, in a greater or less degree, the whole organism. Hence we see that the normal action of the mind depends upon the health of the body. We call this a world of

sin and woe. Yet if we but considered, all our trials arise from ill-health, diseased action of mind and body. The constant transgressions of natural laws have degenerated the human constitution, until we can scarcely conceive what it would have been—what it would have borne, in its primeval state. Enough, however, can be gleaned by comparing the fortitude shown by the same individual in the state of comparative health, usually called *well*, when confessedly sick. Then mole-hills appear mountains, and small troubles unbearable trials. Who has not felt the utter helplessness and despair of the sick, sensitive mind in affliction? How different from the stout heart and buoyant spirits with which we brave adversity in health. Have riches taken to themselves wings and fled away? we are strong to win more, or at least, to "fight the battle for life." Have friends deserted us? we are well and can struggle on, and win more. And last and hardest to bear, have the loved died? we are well, and can bear it; and though unforgotten, the healthy mind possesses a buoyancy which nothing can destroy. Perfect health and despair are incompatible. Know then, when you feel despair's cold hand at your heart, the darkness of night around, and no strength within to bear up, know that the evil is not all without. Disease within aggravates the ills without. Strengthen and purify the body, by attending to the laws of health, and with the trial will come a way of escape. Light will break in, and inward strength will lighten the burden.

The connection between ill-health and vice is even more intimate. With deranged physiology will be deranged mentality—disorder everywhere. He cannot act consistent who is racked by disease, whatever be the purity of his intentions. Though he strive to fulfil the duties of his God-given mission, he strives in darkness and imbecility. Thwarted by physical inability, he finds the mind powerless. Then health is indeed all-important. Yet a knowledge of our organism is necessary to its maintenance. Surely, we would scarcely think of attempting to regulate and keep in order a complicated machine, with whose construction we were strangers. Should we not justly call such an attempt presumption? Yet are not our bodies complicated machines,—“harps of a thousand,” nay million strings?—And oh, most easily are those delicate instruments disordered. We are fearfully and wonderfully made, and unlike other machines, disorder in one part produces disorder in the whole, so intimate



are its dependencies. And besides, if one law is transgressed, there is a greater liability to transgression; depraved tastes and desires, a feebleness of the "light within," is the consequence. Is it strange then, that in the ignorance of the past and present, men have deteriorated?—that the term of human life has dwindled down from centuries, not to "three score and ten," but to about 30 years? Is it strange that this is a world of sin and misery—a sin cursed earth? Stranger that our planet has not become a tenantless desert, or that the miserable remnant of the human family should know aught of virtue or happiness. Or at least, that we have not become, like the blubber-eating Esquimaux, (the patent argument of grease-loving gourmands, and fat-burning theories of calorification) incapable of aught but a beast's life, and a dull beast at that. Think you, that that young woman, (*lady*, beg pardon, *women* are quite out of fashion now) as she tugs at the corset strings, to assimilate herself as much as possible to the very fascinating figure of a *mud wasp*, or *black spider*, or walks the damp earth in the merest apologies in the world for shoes—delicate, little, paper-soled things, so tight as to impede circulation,—thus preventing poor, abused nature from remedying the evil at all, by supplying heat to the exposed members—Think you, I say, that she would dare to thus sow the seeds of a sure and early blight, of premature death, if she knew the extent of the evil she was causing? Did she know the processes, so essential to life, which she is impeding, there would be far less suffering in woman's lot than at present. The curse of life would be, comparatively, no more. The "dark valley would not garner, in its ghostly bosom, so much of the youth and beauty of our devoted sex. Let the advocates of dainty, diseased delicacy in woman,—the admirers of puny, sickly, dying, (aye, dying piecemeal) decay-struck specimens of fashion's architecture, or rather of fashion *desecration*, say what they will, God never made half of the human race to be mere *cyphers*, and suffering cyphers at that—of no use, and a burden to themselves. No, it would be blasphemy to say that God made the miserable wrecks, which strew our blighted earth. There is indeed a little of God's creation left, enough if we would let it work, to "leaven the whole lump"; but the most part, is monstrous deformity—the fungus growth of broken law penalties.

Brooklin, September, 1854.

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ADVERTISEMENTS.

EXTENSIVE CREDIT SALE!!

MR. JOHN CADE having sold his Estate, and intending to Retire, will sell, without Reserve by

PUBLIC AUCTION,

On the 25th and 26th days of October, 1854,

at his residence, near Oshawa, the whole of his superior Stock of Improved Durham Cattle; Pure Bred Leicester Sheep; Horses, Harness, Implements of Husbandry, &c., &c.

THE STOCK CONSISTS OF

1 Span matched Clydsdale Horses, one four and the other five years old,	1 Sow—10 Pigs,
1 Span Carriage Horses,	1 Double Waggon,
1 Draught Horse, 8 years old.	1 Two horse Buggy,
1 Mare and foal,	1 Single Buggy,
1 Brood Mare,	1 Sleigh,
1 Three year old horse colt,	1 Pleasure Sleigh,
2 Two year old horse colts,	1 Pair Bob Sleds,
1 Year old filly,	1 Mowing Machine,
8 Thorough bred Cows,	3 Scotch Ploughs,
5 Two year old heifers,	1 Pair Double Harrows,
2 Two year old steers,	4 Single Harrows,
2 Yearling heifers,	3 Sets Double Team Harness,
2 Heifer calves,	1 Set (double) Buggy Harness,
1 Steer calf,	1 Set single do. do.,
1 Thorough bred Durham Bull, four years old,	1 Set Silver Mounted do.,
1 Thorough bred Durham Bull, 10 months old,	1 Roller,
3 Thorough bred Durham Bull Calves,	1 Turnip Drill with Roller,
3 Aged Rams,	2 Scufflers,
2 Shearling Rams,	1 Ribbing Ploughs,
4 Ram Lambs,	1 Fanning Mill,
68 Ewes,	2 Straw Cutters,
24 Ewe Lambs,	2 Waggon Racks,
10 Wether Lambs,	2 Wheelbarrows,
10 Fat 2 year old Wethers,	1 Grindstone,
18 Fat yearling Wethers,	3 Ladders,
	1 Breaking Bridle,
	1 Stack of Hay,
	7 Acres of Turnips,—to be sold to suit purchasers,

Also, about 50 tons of Hay to be sold by private sale.

It will be seen by the above list of Animals that such an opportunity as this seldom occurs, for those who have a desire to improve their stock. Mr. CADE has been a *Progressive Improver* for the last 20 years, and has spared no pains or expense in procuring the best animals attainable to breed from, and it is doubtful if such a display of animals, taking the Stock all together, can be produced by any Farmer in the Country.

TERMS—All Sums under £1 Cash; over that sum 12 Months' Credit will be given, by furnishing Approved Joint Notes. Interest to be charged from date, if not paid when due,

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Oshawa, Sept. 8, 1854.

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THE ANNUAL EXAMINATIONS will commence on THURSDAY, November 2nd.

The following SCHOLARSHIPS are offered for competition, amongst Matriculants:—

In LAW—2 of the value of £30 per annum, each.

In MEDICINE—3 of the value of £30 per annum, each.

In ARTS—23, (8 under the former and 15 under the new regulations) of the value of £30 per annum, each.

In CIVIL ENGINEERING—2, of the value of £30 per annum, each.

In AGRICULTURE—3, of the value of £30 per annum, each.

In addition to these, there are offered for competition in ARTS:

Amongst Students of the standing of one year from Matriculation—15, of the value of £30 per annum, each.

Amongst Students of the standing of two years from Matriculation—15, of the value of £30 per annum, each.

Amongst Students of the standing of three years from Matriculation—15, of the value of £30 per annum, each.

Each of these Scholarships is tenable for one year, but the Scholars of each year are eligible for the Scholarships of the succeeding year. The Academic year 1854-1855 will end on May 26, 1855, about which period the Annual Examinations for the Academic year 1855-1856 will be held.

Candidates for admission are required to produce satisfactory certificates of good conduct and of having completed the 14th year of their age, and to pass an examination in the subjects appointed for Matriculation; or to produce similar certificates of good conduct and of having completed the 16th year of their age, and to pass an examination in the subjects appointed for Students of the standing of two years in this University. The former are admissible to the degree of B. A. after four, the latter after two years from admission.

Graduates or Undergraduates of any University in Her Majesty's dominions are admissible *ad eundem*, but are required to produce satisfactory certificates of good conduct and of their standing in their own University.

Candidates for Degrees, Scholarships, Prizes, and Certificates of Honor, who have been students of any affiliated Institution, are required to produce certificates signed by the authorities of that institution, but attendance on Lecture is not required, as a qualification, by this University, except for Students in Medicine.

All Candidates, who purpose presenting themselves at the ensuing Examinations, are required to transmit to the Registrar, at his office, in the Parliament Buildings, the necessary Certificates, on or before Thursday, October 5th.

Information relative to the Subjects of Examination and other particulars, can be obtained on application to the Registrar.

Senate Chamber,  
Parliament Buildings, Toronto,  
September 9th, 1854.

## University College, TORONTO.

THE ANNUAL EXAMINATIONS will commence on Monday, October 2nd.

During the Academical Year, 1854-1855, Courses of Lectures will be delivered on the following subjects, commencing on Wednesday, October 25th:

Classical Literature, Logic and and Rhetoric—Rev. J. McCaul, L.L.D.

Metaphysics and Ethics—Rev. J. Beaven, D.D.

Chemistry and Chemical Physic—H. H. Croft, D.C.L.

Agriculture—G. Buckland, Esq.

Mathematics and Natural Philosophy—J. B. Cherri-man, M.A.

History and English Literature—D. Wilson, L.L.D.

Natural History—Rev. W. Hincks, F.L.S.

Mineralogy and Geology—E. J. Chapman, Esq.

Modern Languages—J. Forneri, L.L.D.

Oriental Literature—J. M. Hirschfelder, Esq.

Information relative to admission, attendance on lectures, &c., can be obtained on application to the President.

N.B.—The Examinations which are to be held as above stated, are intended for those Under-graduates who have been Students of the College during the past year, and also for those Matriculants, who purpose entering the University of Toronto, by passing an examination in the subjects appointed for the Second year of the Academic Course in that Institution.

Occasional Students are admissible, as heretofore, without Examination.

Toronto, Sept. 20, 1854.

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\$1,000 to \$4,000 a Side!

Or in Friendly Competition.

IMPORTED "YOUNG LION" Within one Month after his Season is over (due notice being given), is open to

WALK OR TROT 5 MILES AND UPWARDS.

Against any Stallion, Gelding or Mare, of his weight or more, in Canada or in the United States, imported or otherwise, and as soon as Horses can be found to weigh with him, any Horse weighing within 250 lbs. of his weight will be allowed to compete.

—ALSO—

At the same time, he will be open to Trot his Mile in less than FOUR MINUTES, in or out of Harness.

--ALSO--

At the same time, he will be open to draw any weight from Two Tons and upwards, from 5 Miles to 100, and return unladen in the shortest space of time, against any Stallion, Gelding or Mare, of any class, size or weight, either in Canada or the United States, imported or otherwise.

--ALSO--

For Superiority of Action against any Horse of his Class wherever he can be found.

One Judge to be chosen from among the veterinaries of New York, one from Montreal and one from Toronto, whose services are to be paid for by the Winner.

The Trials to take place in the vicinity of Toronto; and all travelling expenses to be allowed to the Owner of any Horse that may compete coming from a distance.

W. B. CREW.

Toronto, May 27th, 1854.

6-6-m.



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### The Best and Cheapest Dressing for Seed Wheat.

**PATRONISED** by Members of the Royal Agricultural Society of Great Britain, and by many of the first Practical Farmers in the Kingdom. Thirty-five per cent. is saved, and a good crop insured, by using

### D. Clarke's Wheat Protector,

Which has been thoroughly tested for SEVEN SEASONS, and proved to be A CERTAIN PREVENTATIVE OF SMUT IN WHEAT, and an Effectual Safeguard against the Attacks of the SLUG, GRUB and WIREWORM.

Prepared by D. Clarke, Chemist, Woburn, Beds, England, in Packets sufficient for Seven Bushels of Seed.

It is peculiarly gratifying when we take a retrospective view of the past, and find it affords present satisfaction, and abundant reason for future hope. After Seven years' trial of his preparation, D. Clarke feels himself placed exactly in this position, by the very numerous Testimonials to its efficacy which he receives from Practical Agriculturists throughout the entire width and breadth of the Kingdom; and by the steadily increasing sale which it commands notwithstanding the strenuous efforts of its opponents to lessen its sale by such Cautions as "Beware of worthless Imitations," and by lowering the price of the article it is said to imitate. An increased demand of upwards of 30 000 Packets the last Four Seasons, is a positive proof of its value, and a sufficient stimulus to the Proprietor to use every effort to maintain that decided superiority which his Preparation is acknowledged to possess over other Dressings for Seed Wheat.

### AT A COST OF ONLY 1s. PER ACRE.

This Preparation will not decompose, but retain its properties for any length of time, if kept in a dry place. Seed dressed with it may be sowed directly, or if the weather prove wet, so as to prevent its being sowed, it may remain three weeks without sustaining any injury.

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The following are a few out of the many Testimonials received:—

*From W. Anderson, Esq., Bailiff to His Grace the Duke of Bedford.*

OAKLEY, Sept. 10th.

SIR,—I beg to inform you I have now had an opportunity of examining both the winter and spring Wheats dressed with your Preparation, and in both instances, I am happy to say, not one single ear of smut is to be found; I can, therefore, with satisfaction recommend it to my brother Agriculturists.

I remain, Sir, yours, &c.,  
MR. D. CLARKE. W. ANDERSON.

NEWPORT, SALOP, Oct. 11th, 1850.

DEAR SIR.—Last year I disposed of a quantity of your "Wheat Protector," and am happy to inform you that the result of the late harvest proves it to be a very valuable preparation. In every case in which I have been able to make inquiry, I find that its character as a Preventive of Smut, Wireworm, &c., has been fully borne out by the experience of the past season. Richard Healy, Esq., of Dodecote Grange, informed me he had used it very successfully, and has found it answers every purpose for which it was intended. The great simplicity in the mode of its application is not the least recommendation in its favor, as thereby much time and trouble are saved; whilst its very moderate price is sufficient inducement for each and all to make a trial of it.

I am, yours respectfully,  
MR. D. CLARKE. HENRY CHALMERS.

*Second Testimonial from E. W. Moore, Esq., Agent to the Earl of Radnor.*

COLESHILL HIGHWORTH, BERKS., August 23.

SIR,—I enclose you a post office order for the Packets of "Wheat Protector" I used last year; you can send me double the number of packets for this season, as I am perfectly satisfied with the result, and find this method of preparing the seed so simple, that I prefer it to the others I formerly used.

I am, Sir, your obedient Servant,  
MR. D. CLARKE. E. W. MOORE.  
October, 1854.

## Hydraulic and Agricultural Engineering.

MR. JOHN HENRY CHARNOCK, Hydraulic and Agricultural Engineer, (a Member of the Royal Agricultural Society of England, and author of its Prize Report on the Farming of the West Riding of Yorkshire, as well as other papers on Drainage, &c., published in his Journal; and late an Assistant Commissioner under the English Drainage Acts.) begs to offer his Professional Services to the City and Town Authorities, and to the Agriculturists of Canada, and to solicit the honor of their patronage and support.

Having for several years past devoted special attention to that branch of Engineering which embraces more particularly works of Town Sewerage and Water supply, the Drainage, Irrigation and general Improvement of Land, the planning and erection of Sewerage and Drain-pipe works, Farm Buildings and Machinery, together with the laying out of Farms and Ornamental Grounds, Mr. Charnock ventures to think that such experience, coupled with a practical knowledge of the approved systems and appliances of the day, will enable him to render valuable and efficient services to those who may favor him with their commands.

Mr. C. is furnished with testimonials from numerous parties of known standing and repute, which he will be happy to submit to those who may contemplate employing him. And all communications addressed to him, CITY OF HAMILTON, CANADA WEST, will have prompt attention.

JOHN H. CHARNOCK.

OFFICE, JAMES'S STREET, HAMILTON—At Mr. Simons' Land Agent, close to the St. George's Hotel.  
Hamilton, August, 1854.

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TO AGRICULTURAL SOCIETIES and OTHERS requiring the best bred Cattle from England—comprising:

PURE BLOOD HORSES. SHORT-HORNED CATTLE, NORTH DEVONS, HEREFORDS, AYR-SHIRE and ALDERNEY COWS.

Also: Pure Bred Southdown, Cotswold and Leicester Sheep.

Also: Suffolk, Essex and Berkshire Swine; imported on commission into any part of Canada and the United States, by Messrs. Thos. Betts & Brother, of Herts, England.

Cattle ordered previous to the 1st of September will be insured if desired.

Every information with regard to terms and shipment of Stock to America will be strictly attended to by applying to W. EVANS, Esq., Secretary to the Board of Agriculture, Montreal, or to J. M. MILLER, 81 Maiden-Lane, New York City.

THOS. BETTS & BROTHER,  
Herts, England.

Toronto, August, 1854.

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No. 11.

## Agriculture, &c.

### PROVINCIAL EXHIBITION—1854.

The Ninth Annual Exhibition of the Provincial Agricultural Association of Upper Canada, was held, as our readers are probably now all aware, at the newly created city of London, on the 26th, 27th, 28th and 29th of September last. The site selected for the Exhibition was the Old Parade ground, near the Military Barracks, now unoccupied, and about 28 acres in extent. It was enclosed in the usual manner with a high temporary board fence, and the buildings for the several departments of the Show were all finished as soon as required, to receive the various contributions. The ground approached a square in form, though not precisely a square. The Floral Hall, for the display of Fruits, Flowers, the Fine Arts, and the Ladies' Department, was a building of circular form, and stood nearly in the centre of the ground. At a sufficient distance from this, and radiating from it, stood the tents and buildings for the reception of the Agricultural and Vegetable products, the Mechanical department, Domestic Manufactures, &c. The refreshment booths, of which there were nine in number, were placed in different parts of the ground, interspersed among the other buildings. Several acres, on the northern portion of the ground, were occupied by a small artificial lake, named Lake Horn. The Horse-ring was placed between this and the Floral Hall, and the Horses were exhibited principally in this portion of the grounds.—The pens for the Cattle, Pigs, Poultry and a few Sheep, were ranged on the eastern side of the enclosure. The greater number of the Cattle

were, however, exhibited tied to poles, which were fastened horizontally to posts sunk in the ground for the purpose. These were also on the eastern side of the enclosure. On this side were also exhibited, Carriages, Waggons, Agricultural Implements, &c. The pens for the Sheep occupied the whole of the western side of the enclosure, and were all taken up. The offices for the Secretary, Treasurer and Committee, and the gates of Admission, were on the southern front.

Carriage roads were made through the grounds in various directions and were lined with evergreen trees, temporarily planted out. The buildings, tents and fences were liberally decorated with flags and devices of various descriptions, giving the whole a very gay and lively appearance.

The Secretary and Treasurer of the Association arrived in London on the Thursday preceding the Show, and commenced taking subscriptions and receiving entries on Friday. The greater portion of the exhibitors in the neighborhood made their entries on this day and Saturday, thus avoiding the crowd which must necessarily take place on the Monday and Tuesday, when strangers arrive. Visitors and articles for exhibition began to arrive on Monday, the 25th. The Great Western Railroad Company had liberally offered to convey articles to and from the Exhibition, free of charge, but the amount of accommodation required, was so much greater than the Company had anticipated,—that many articles, as well as persons,—were unfortunately unable to reach London so soon as desirable. The entries were nearly all completed by Tuesday evening. A few articles, however, belonging to persons who could not get them brought by the Cars on Tues-



day, were entered on Wednesday morning, the 27th. On this day a large number of members joined the Association, amounting on this and the other days to nearly 2,000,—a number exceeding that of any previous show. On Wednesday afternoon, as usual, the Show Ground was opened to Members of the Association, who, with the Judges, Delegates, Exhibitors, Gentlemen of the Press, and others, probably amounted in number to 4 or 5,000, and had a good opportunity of inspecting the various articles in the Exhibition before the crowd on Thursday, when the general public were admitted. All the houses of public entertainment in London were by this time completely filled, so that it became very difficult to obtain satisfactory accommodation,—many persons, before the Show was over, being compelled to content themselves with very indifferent arrangements for passing the night. It is but due to the residents of London and vicinity to say in this place, although we profess to give in the *Agriculturist*, an official rather than a popular report of the Exhibition, that they exerted themselves to the utmost to extend their hospitalities to visitors, and that looking at the very great and sudden augmentation to the population, no doubt exceeding the ordinary population of the town, the accommodation obtained was much better than might have been expected.

Early on Thursday morning, the 28th, a very large crowd of persons sought admission to the Show Grounds, this being the first day on which the public were admitted on purchasing tickets at 7½d. each. Owing to the excellent arrangements at the gates there was extremely little crowding, visitors being able to obtain their tickets and pass into the grounds with very little detention. During the day, probably as many as 25,000 persons were present. Everything intended for the Exhibition having by this time arrived, and this day (Thursday) usually being considered the most important day, it will be proper in this place, to offer a brief general sketch of the amount of competition displayed in the various classes, as compared with former Shows:—

In Blood Horses there were 22 entries, being about equal in number to the Show in 1852, at Toronto, but behind that at Hamilton. In the class of Agricultural Horses there were 191 entries, being in advance of Hamilton last year, but not equal to the number at Toronto. In the class of Durham Cattle the entries were 81, being nearly the same as at the two last Shows. The Cattle shown in this class were also believed to

be equal in quality to any former exhibition. In Devons there were 50 entries, exceeding the Show in 1852, and being about equal to that of last year. The show of Cattle in this class was highly creditable to the exhibitors, there being some very splendid animals; Mr. W. H. Lock, of Yarmouth, R. Ferrie, Esq., M.P.P., of Doon, Waterloo, and Daniel Tye, Esq., of Wilmot were the principal exhibitors. In Hereford, there was only one entry, a Bull, shown by the County of Oxford Agricultural Society. In Ayrshires there were 24 entries, showing a decrease upon last year's Exhibition in this valuable class. In Grades there were 92 entries, being double the number shown at either of the last Exhibitions. Among the cattle exhibited were some very handsome black Galloways, shown by Mr. Roddick, of Cobourg, and Mr. George Miller, of Markham, and all lately imported. In Fat and Working Cattle there were altogether 51 entries, showing a large progressive increase in this class. One of the entries in this class was for the team of 10 yoke of Oxen, shown by the Township of Westminster. In Leicester Sheep the show was the largest, and perhaps the best that has yet been held. The entries were about 240, being much in advance of any previous Exhibition.—Mr. J. Dixon, of Clarke, and the Messrs. Miller, of Markham and Pickering, were among the principal exhibitors. In Southdown Sheep the show was about equal to the two last, there being 44 entries. In Merino or Saxon Sheep there is a falling off exhibited, the entries being about 17—about half the number at the preceding Shows. In Fat Sheep there were 11 entries, showing a decrease of competition in this class. Among the entries of Sheep, were about 30 fine Cotswolds, lately imported, and shown by Mr. George Miller, of Markham, Mr. Peel, of Amherstburgh, and Mr. W. Miller, of Pickering. Mr. George Roddick, of the Township of Hamilton, Northumberland County, exhibited also some fine Cheviots. In the show of Pigs, the Exhibition was much in advance of either of the two last—there being 83 entries, and among them some exceedingly good animals. In Poultry also the Exhibition far outstripped any of its predecessors, there being no less than 170 entries, nearly treble the number at either of the preceding Exhibitions, and the collection, consisting of several hundred fowls of the different kinds, being highly creditable to the spirited breeders.

Without enumerating the other departments of the Exhibition in detail, it may be sufficient to state that while in the Live Stock department the Show was on the whole, perhaps fully equal in appearance to any of its predecessors, and, in some of the classes, superior, there was, on the other hand, in Agricultural and Horticultural products, in the Mechanical department, and in Domestic Manufactures, a marked falling off.—This does not, however, indicate any diminution of public interest in the Annual Exhibitions. On the contrary, this interest appears to increase progressively every year. It is rather to be laid to the, as yet, incomplete means of communication between London and other parts of the country, and the want of sufficient car accommodation on

the lines of Railroad now in operation. No doubt many persons were prevented from exhibiting from the want of such forwarding facilities. As an exception to the above statement of deficiency, it is proper to state that the show of Fruit, in quality, was exceedingly fine. The deficiency in other Horticultural products is, probably, to be ascribed to the smaller number of market gardens in the vicinity of London, in comparison to those which may be expected to be found in the neighborhood of older and larger cities. It is to be regretted that the farmers in the vicinity of London itself, did not do more to supply the deficiency in the Agricultural department, as, judging from the specimens they did bring forward, they certainly might have done so with advantage. We must except also from the above remark the class of Carriages, in which the show was highly creditable, and probably fully equal to any former Exhibition. In Agricultural Implements, Mr. Wade, of Cobourg, showed a machine, invented by himself, and worked by a horse, for boring Post Holes. This machine, from the expedition with which it can be made to work, offers great facilities in the construction of fences. In Manufactures of Metals, Mr. Date, of Galt, showed a highly finished and valuable collection of edge tools. The Ladies of London, assisted by those from other quarters, rendered the Floral Hall, by their contributions, as usual, one of the most attractive features of the Exhibition; and in the department of the Fine Arts also, there were many paintings, drawings, &c. shown, deserving of high praise, a considerable number of the exhibitors being amateurs, and lady amateurs. In the Foreign class the Exhibition fell short of any of its predecessors, there being only one or two entries. Space and the nature of this notice, forbid our alluding specially to the articles shown by the many exhibitors.—Otherwise it would be an agreeable task to point out the excellence of many of the animals or specimens of skill exhibited. We must refer to the Prize List to supply all further particulars, and to show who, in the opinion of the Judges, exhibited the finest articles of each kind.

On the day at present under notice (Thursday), His Excellency the Governor General, Lord Elgin, who had arrived in London the preceding day, and had received and replied to an Address from the Town Council, visited the Show Ground, accompanied by Messrs. Hincks and Cameron, John Wilson, Esq., M.P., Sir Cusack Roney and the members of the Board of Agriculture. At half-past twelve o'clock the whole company ascended the pavilion, when Sheriff Treadwell presented to his Excellency the following address:

*To the Right Honorable James, Earl of Elgin and Kincardine, K.T., Baron Elgin, Governor General, &c., &c.*

MAY IT PLEASE YOUR EXCELLENCY,—

It is with pride and satisfaction we, the President, Vice-President and Members of the Agricultural Association of Canada West, hail your Excellency's presence at our Annual Provincial Exhibition.

Aware, as we are, of the deep interest which your Excellency has ever taken in the Agricultural, Mechanical and Commercial advancement of this noble portion of Her Majesty's dominions, we feel well assured of the high gratification which the present Exhibition must have afforded you. Nor will it be forgotten by the farmers of Canada West, that your Excellency has contributed by good wishes and many judicious and munificent donations, to the advancement of Agricultural and mechanical improvement amongst us.

In conclusion we beg to assure your Excellency, that the progress made in the magnificent works which have been commenced, or which have been completed of late years in Canada, during your Excellency's administration, will ever be associated with our grateful recollections.

With every wish that all prosperity and happiness may attend your Excellency, we bid your Excellency God speed.

His Excellency replied to the following effect

Mr. President—Gentlemen,—I am much obliged to the Firemen and to the Guards who have attended here to-day, for the purpose of keeping order; but as I am particularly anxious to tell my friends—the farmers of Upper Canada—how much I have been delighted by what I have seen to-day, I am very anxious that they (the Guards) should not keep them away, as I wish them to allow the crowd to come as near to this stand as possible. (Great applause. Here the audience were allowed to press forward to the stand.)—Gentlemen, I have left the seat of Government,—perhaps I ought to say that I have stolen away from the seat of Government,—at a very busy period of one of the most important sessions ever held in Canada, because I was most desirous to avail myself of the opportunity to take some of my old friends—the farmers of Upper Canada—by the hand, and to ask them of the progress which they have been making since I had the happiness of being among them, and to congratulate them upon their prospects and their prosperity. Gentlemen, I always look with pleasure to these friendly and social meetings, which, when I resided in Upper Canada, I had the satisfaction of having with the farmers of this part of the country, because, although I am not vain enough to suppose that I could impart to them any information with respect to their own affairs, that would be of any value to them, still I always derived the greatest possible gratification and profit from entering into conversation with them. (Applause). Whenever we had a time of difficulty, I had reason to admire and respect them for the good sense and moderation they displayed in these circumstances of difficulty. Gentlemen, when I last visited the town of London, as was very truly stated in the Address which the municipality presented to me yesterday, it was a time of political excitement. But there was one circumstance at that period which was not alone prejudicial to the interests of the country, but was the occasion of solicitude and regret to those anxious to promote its prosperity and best interests. At that period the bushel of wheat raised on this side the line was worth one-fifth less than



the same article raised by the producer on the other side. I might have been here a day sooner if I had been able to leave Quebec on Saturday. But I will tell you why I did not leave on Saturday. I was engaged in the afternoon of Saturday in giving the Royal Assent to a bill passed unanimously by the Legislature of Canada, and I must do both branches of the Parliament justice for the unanimity with which they have passed that measure, so important to the farmers of Upper Canada. (Cheers.) I was most anxious to bring into effect that treaty which will do away with such a discrimination again taking place, as regards the farmers of this country.—(Great applause). Well, gentlemen, I know that two or three objections are urged against this treaty. I will, however, only mention one, because there is a touch of originality about it, which gives it some title to be mentioned. I have seen it said that this Reciprocity is to do a great deal of mischief to the farmers of this country. (No, no.) I will tell you why—because it is going to induce them to raise so much wheat, that they will exhaust all the productive soil of the country. I will remind you that all other agricultural products are now to be introduced, duty free. But I will tell you that I have too much confidence in the soil of Upper Canada, and in the good sense of its farmers, to think that they are going to exhaust the productiveness of the soil. I know that this magnificent soil, if treated properly, instead of becoming exhausted, will go on producing more and more year after year. (Applause). I must trust to your wisdom and your agricultural skill to treat it properly.—We must have more attention paid to the raising of green crops, and if you only pursue that system some years hence, instead of finding the soil decreasing in its productiveness, you will find that in proportion to the number of acres under cultivation, you will have far more for the support of human existence than at the present day. And, gentlemen, whenever the average produce of Upper Canada is thirty bushels per acre instead of twenty, I will come back and visit your shores. (Great applause).

Col. Thomson proposed three cheers for His Excellency, which was responded to with great enthusiasm.

The band then played the Queen's anthem.

His Excellency then, in company with several other gentlemen, visited every part of the Show Ground, examining every department minutely, and spending several hours in so doing.

#### PUBLIC MEETINGS

Were held in the Court House on the evenings of Wednesday and Thursday. Mr. Harris, of the *Rural New Yorker*, Rochester, delivered an interesting address on the British Four Course System of Husbandry, and enumerated a number of highly instructive experiments of Mr. Lawes, of England, with whom Mr. Harris had resided for some years. A vote of thanks to Mr. Harris was carried by acclamation. Mr. Charnock, of

Hamilton, gave an address on the principles and advantages of Draining, which could not fail of being highly useful. Mr. Henry Cowing also described by drawings, his proposed Steam Apparatus for Ploughing, Engineering and Mechanical purposes in general, which evinced much ingenuity and perseverance. The Hon. Adam Ferguson, E. W. Thomson, Lewis F. Allan, of Buffalo, Sheriff Ruttan, Baron de Longueuil, Robert Cooper, Professor Buckland, Mr. Russell, of Fifeshire, Scotland, with a number of others, took part in the discussions.

The President, C. P. Treadwell, Esq., introduced the proceedings with the following address :

GENTLEMEN,—Having visited London in May last, to ascertain the arrangements that were in progress for the Exhibition of our Agricultural Association, I was delighted beyond measure at the appearance of your splendid Town, which must have been given an accelerated speed in its march of improvement by the opening up of the Great Western Railroad through it in January last. Its progress had been previously unexampled in Canada, or in any part of America except California.

The first thing that I would notice is the strict observance of the Sabbath which I found here, which is generally accompanied with eminent temporal prosperity. It was one of the fine mornings of May, for which our climate is celebrated, and the first persons I noticed upon the sidewalks of the beautiful broads streets which intersect each other at right angles, were the teachers and scholars bending their steps to the different Sabbath Schools, which I believe are established in connection with all the different churches, and at the proper hour, the streets were thronged with people of all classes and ages going to the house of worship. These circumstances give a most favourable opinion of the first founders of the Town as well as of its present inhabitants.

London, on the Thames, in the County of Middlesex, and adjoining Westminster, gives rise to many pleasant associations, and the names of its newspapers, the *London Times*, the *Middlesex Prototype*, the *Canadian Free Press*, are three of the best names that Canadian Newspapers could have possibly assumed. May they elevate and guide public opinion without ever descending from their high position.

London was surveyed by the late Colonel Burwell, by order of the Provincial Government, in 1826, who was one of the pioneers with the late Hon. Col. Talbot, in this part of the then western wilderness of Canada.

I remember London when it was erected into a District Town, when it contained its present Court House and a few other buildings which were surrounded by a dense forest of evergreen, and the country in the distance covered with small oak, which is now occupied as highly cultivated fields. The town has twice been reduced to ashes, but by the energy of her inhabitants it

has risen from its ruins, and shines forth at this time the first inland town in British America, and I applaud the laudable ambition which prompts you to apply for a charter erecting it into a city, of which her old namesake the world's metropolis will have every reason to be proud.

Your merchant shops and importing establishments will furnish all the necessities and conveniences, nay even the luxuries and delicacies of life, that can be wished for by the most fastidious taste, and visitors and emigrants from the old country would not unusually find themselves most agreeably surprised and astonished on visiting this and many other of our towns and cities.

Your manufactories are beginning to assume a degree of consequence that is of the highest importance. Your mechanics, from the structures they have erected, have proved themselves equal to any in Canada, although our country claims for itself some of the finest buildings in America.

Your Branch Banks, your Mechanic's Institute, your Fire Companies, are such as do great credit to London and the surrounding country. These together with the Provincial Exhibition, must fully repay strangers for visiting London on this occasion.

I cannot help noticing some of your splendid buildings. The several churches, both Protestant and Catholic, do much credit to you, and also you have a splendid chime of bells, being I believe the only chime in Upper Canada. No town or city can boast of having a finer Market than Covent Garden, and your Town Hall when finished will compare favourably with any building on the Continent. The Tecumseh House, partly finished, will add much both to the beauty of the Town and to the comfort of the public, and will excel any building of the kind in the Province. Your buildings erected at so much expense for Mechanical and Mercantile business, and particularly the Wellington and Commercial buildings, show a degree of prosperity scarcely to be equalled in any part of the Continent. I observe that your town was the first in which Free Schools were established, and it only becomes necessary to witness the hundreds of children attending them to be satisfied that they are properly and successfully conducted. Your Mechanics' Institute, with its large library, show that all are alive to the intellectual wants of the rising generation, and combine together to aid in extending the advantages of education to all; you have already lighted your town with gas, and I am informed that it is contemplated to have it fully supplied with water; other towns would do well to adopt your admirable system of drainage which adds so much to the comfort and health of your people. I cannot imagine any modern improvement that you have omitted to introduce. No person visiting London but must be struck with the fact that all are united and work most harmoniously in carrying forward every enterprise of advantage to the town, and from this alone has the value of property risen to immense prices.

In 1850 it was estimated that the annual amount of coal raised in Great Britain, was thirty

five million tons, of which only two millions seven hundred and twenty eight thousand tons were exported; leaving the remainder or thirty millions two hundred and seventy two thousand tons for domestic and industrial consumption. It is confidently expected that when your town gets all her railroads completed, that she will no doubt consume a large amount of coal for manufacturing purposes.

There is one subject to which we would beg to draw your attention, it is that of founding an Agricultural School in London. Toronto is doing much for the Province at large, by its Chair of Agriculture in the University, filled by Professor Buckland, together with the Experimental Farm established on the University grounds, the Normal and Model Schools, surrounded as they are by their beautiful gardens, in which are illustrated to a very great extent the science and practice of Agriculture, affording to the youth of the Province much very valuable knowledge. There is, however, no purely Agricultural School yet established in Canada.

In 1850 there were of Agricultural Schools.

In Great Britain	-	-	-	70
In France	-	-	-	75
In Prussia	-	-	-	32
In Austria	-	-	-	33
In Russia	-	-	-	68

Shall not London in Upper Canada be entitled to one, and shall it not be established immediately?

#### THE ANNUAL MEETING OF THE ASSOCIATION

Was held in the Committee Room on the Show Grounds, on Friday, Sept. 29th, C. P. Treadwell, Esq., President, in the Chair. Directors present: E. W. Thomson, President of the Board of Agriculture, Hon. Adam Fergusson, Mr. Sheriff Rutan, J. B. Marks, D. Christie, R. L. Denison, Professor Buckland, B. Rice and A. McKellar.—Delegates: from the County of Kent, W. Withers and W. Miller, Bruce; W. F. McCulloch and P. Woods, Perth; Col. Askin and T. C. Dixon, Middlesex; Col. Wilson and Oliver Blake, Norfolk; J. Armstrong, Elgin; G. Alexander and J. McCallum, Oxford; G. Stanton and H. Phelps, Brant; J. Radcliffe, Welland; Judge Campbell and J. Simpson, Lincoln; J. Webster and H. O'Reilly, Wentworth; D. Tye, Waterloo; T. Douglass and S. Clarke, Halton Dr. Pass, Simcoe; J. P. Wheeler and E. Musson, York; E. Birrell, Ontario; M. Jones and R. Allen, Durham; J. Wade and J. Stede, Northumberland; J. Harvey and I. Garbutt, Peterborough; J. Jacob, Victoria; B. Davy and A. Steward, Hastings; Dr. Barker and R. Perry, Lennox; P. Davy and Baron de Longueuil, Addington; W. Fergusson and M. Strange, Frontenac.

David Christie, Esq., Brantford, was elected



President for the ensuing year; William Niles, Esq., M.P.P., 1st Vice-President; Baron de Longueuil, Kingston, 2nd Vice-President, and R. L. Denison, Esq., Toronto, Treasurer.

The Secretary read a letter from the Mayor of Brantford, offering the Association £1,000 towards the funds of the Exhibition, on condition of its being held in that town next year. Mr. Sheriff Ruttan, on behalf of Cobourg, promised £750.—After considerable discussion it was resolved, That the next Exhibition should be held at Cobourg;—the time to be determined by the Board of Agriculture.

After considering other matters of a routine character, votes of thanks were unanimously passed to J. B. Askin, Esq., and the Local Committee, for their efficient services;—to the Mayor, Corporation and Inhabitants of London; the County Councils of Middlesex and Elgin; and the Canada Company, for their munificent donations; to the Directors of the Great Western Railway, and Steamboat Proprietors; the Judges, the Ladies, and the Members of the Press.

It was also agreed to request the earnest attention of the Board, to some improvements in the mode of taking Entries, so as to afford sufficient time for making the necessary arrangements of the Grounds, &c., and for securing the timely services of efficient judges.

The following Bye-Laws, after much consideration and discussion, were adopted, and a vote of thanks passed to J. B. Marks, Esq., the framer thereof.

#### B Y - L A W S :

**OF THE AGRICULTURAL ASSOCIATION OF UPPER CANADA, PASSED AT THE ANNUAL MEETING, HELD AT LONDON, THE 28TH SEPT., 1854.**

Whereas the Legislature of Canada, having enacted a law, 16 Vict. Chap. 11., passed on the 10th day of February, 1852, establishing a Bureau of Agriculture, and other Regulations relating to Agricultural Societies.

It is therefore requisite and necessary to pass a By-Law for the guidance of the office-bearers and members of the Agricultural Association, in conformity therewith, and to repeal the By-Law passed the 20th of February, 1850.

1st. Be it therefore enacted, by the President, Council and Directors of the Agricultural Association, that hereafter in all matters connected with the Agricultural Association during the days of the Annual Exhibition, the members of the Board of Agriculture and the Directors of the Agricultural Association, shall hold daily meetings in the Committee Room on the grounds, of which the President or Vice-President shall be one, and three members shall be a quorum, and

shall transact all the business connected therewith, which shall not previously have been intrusted to others; and all questions of importance which shall arise during the Exhibition, shall be submitted to the said Board, whose decision shall be final.

2nd. The Members of the Board of Agriculture being the Council of the Association between the Annual Meetings, and the Presidents and Vice-Presidents of County Societies being Directors of the Association, shall also ex-officio be Directors.

3rd. The Members of the Board of Agriculture shall attend at an early convenient time in each summer, with the Secretary and Treasurer of the Association at the place voted for the next Exhibition, for the purpose of appointing a local committee of not more than fifteen members, selecting the grounds, and making such other preliminary arrangements as may be requisite.

4th. The Board of Agriculture shall furnish the Secretary of the Association for the guidance of the Local Committee, with plans and dimensions of the necessary buildings and offices to be erected in the Show Grounds, and instruct the Secretary or some other superintendent to have the fencing in of the ground and erection of the Buildings performed by Contract.

5th. The Board of Agriculture shall, with the Secretary of the Association, prepare and make ready in due time a Premium List for the Fall Exhibition, and publish the same with a code of regulations for the information of the Public, and the Secretary shall prepare a sufficient number of Books for entering the articles for exhibition, and the Judges' Books, and with the advice of the Board of Agriculture the names of the Judges may be printed with the Premium Lists and regulations.

6th. The Annual Meeting of the Association shall take place on one of the days of the Exhibition—the day to be printed in the Regulations for the year, at which meeting the President, Vice-President and Treasurer shall be first elected, and the Treasurer shall give such security as the Council of the Association shall direct.

7th. At the Annual Meeting during the week of the Exhibition, the Directors of the Association shall take into consideration and decide by vote, the place and time of holding the next meeting and Exhibition of the Association, and make such rules and regulations as may be then necessary for the management of such Exhibition.

8th. The Secretary and his Assistants shall make the necessary entries of all stock and articles for Exhibition, and deliver the Judges' books in due time, in accordance with the annual regulations printed with the Premium Lists. When the Judges shall have completed their reports and delivered their Books to the Secretary, that officer shall affix his name to the foot thereof, and hand them over to the Treasurer for payment of the Premiums.

9th. With regard to the Badges of Office and of Membership, the Secretary will make this a special Department for one of his Assistants who shall account for the number of each class delivered into his charge, either by handing over the

money to the Treasurer, or producing the order of delivery.

10th. The Treasurer shall take charge of all monies advanced by the Government, for the benefit of Agriculture as well as all subscriptions and donations made to the Association by Counties, Townships, Cities, Towns or Societies, the sale of Members' Badges, and for Tickets sold at the entrance gates, entering the same under their respective heads in his general account. The payment of premiums, the Bills of the Local Committee, and other contingent expenses of the Association, to be paid on the spot where the Exhibitions are held, as far as practicable.

11th. The Treasurer shall establish with the advice of the Council, a proper number of Assistants in the Ticket Office, in a manner that as little delay as possible may be experienced by the public in obtaining Tickets of Admission, placing at the entrance gates a sufficient number of respectable Constables or Policemen and Ticket receivers as shall be necessary to admit the public without confusion and for keeping due order thereat.

12th. The Accounts of the Association to be made up and closed on the 31st day of December in each year, ready for auditing, attaching thereto a List of all claims on the association remaining unpaid—all such accounts to be finally lodged as records in the Secretary's Office, and the balance of cash and all other monies received, are to be placed to the credit of the Association in the Bank of Upper Canada. The Treasurer will also take charge of all stores and property belonging to the Association, and cause such as may be required to be transported from place to place, where the annual exhibition shall be held.

13th. The Secretary and Treasurer shall, as far as practicable, for the purpose of establishing a uniform system of management at future shows, endeavor to engage the services of the same efficient parties in their respective departments.

14th. Local Committees shall appoint their Chairman, and have power to appoint sub-committees to superintend the several departments. The President, Vice-Presidents, and the ex-Presidents of the Association, and the Secretary and Treasurer shall be ex-officio members of the Local Committees and all sub-Committees.

15th. The Local Committee shall meet and adjourn from time to time, and assist the Council of the Association in selecting the grounds, and in superintending the fencing in thereof, and give their advice and support to the superintendent or overseer to see that the several buildings and works are duly executed according to contract. They shall provide provender for stock, and procure all other articles required by the Association not included in the contract, and make such arrangements as may be necessary for guarding and safe keeping the articles exhibited, by employing Policemen, Constables or private persons by day and by night, sufficient to protect the property placed on the Grounds for exhibition, and cause any drunken or disorderly persons to be lawfully imprisoned or put out of the grounds forthwith.

16th. The local committee shall pay over to the Treasurer of the Association all Subscriptions and donations of money they may receive for carrying forward the Exhibition, and the Treasurer shall pay all Bills and accounts of the local Committee approved by their chairman.

17th. The Local Committee shall make proper arrangements and places for the Implements of Husbandry, Stock, Machinery and Goods, in such manner as may be convenient for the Judges to examine the same, and cause a competent person to be placed in charge of each class, who shall be furnished with a list of the Articles put in his care, and conduct the Judges to examine the same.

18th. The Local Committee shall make arrangements with Steamboat Proprietors, and Railroad Directors, in order to facilitate access to the Exhibition, and shall make similar arrangements with hotel keepers, boarding-house keepers and other individuals, so as to have good accommodations for visitors at moderate rates.

19th. A suitable building shall be provided on the grounds for the use of the Local Committee, and it is clearly understood that the refreshment Booths shall be conducted so as to maintain sobriety and good order, otherwise such Booths as infringe this regulation shall be immediately closed by an order from the President.

20th. The Members of the Agricultural Societies of the several Townships within the County or United Counties, wherein the Annual Exhibition may be held, and the members of the Society of the said County or United Counties, shall be also members of the Association for that year and have Badges accordingly, provided the Agricultural Societies of the said Townships or the said County or United Counties shall devote their whole funds for the year, including the Government grant, in aid of the Association.

21st. No member of the Board of Directors or of the Local Committee shall be concerned in any contract or work of profit, directly or indirectly, as surety or otherwise, ordered to be performed for the use of the Association.

At two o'clock the President and Board assembled on the Grand Stand, and a large audience having surrounded it, the President read the following

## ANNUAL ADDRESS.

LADIES AND GENTLEMEN,

It devolves on me, as your President for the present year, to deliver the Annual Address before the Agricultural Association of Upper Canada, and this numerous and highly respectable audience. I regret much that this honorable and very responsible duty had not fallen into abler hands.

A bountiful Providence has again crowned the labors of the husbandman with abundant success; while we enjoy peace within our borders, we, as well as the inhabitants of the principal cities and towns of America, have to mourn the ravages of an epidemic for the most part confined to the



emigrants arriving on our shores, yet many of all classes of our resident population have become its victims.

Another cause of deep regret must be the war in which the principal nations of Europe are embroiled, and which has already resulted in the profuse effusion of human blood. It is nevertheless gratifying to know that the British Flag which has so long "Braved the Battle and the Breeze," is once more unfurled, and in connection with France, sustaining the side of right and justice—defending the oppressed against the oppressor.

As the gentlemen who have previously occupied the Presidential Chair of this Institution, have been those possessing a thorough knowledge of the agriculture of the Province, and all branches connected with it, they have left me but narrow limits upon which to address you at this time, even had my acquaintance with its theory and practice been much more extensive.

The Government has been pleased to grant the usual amount of one thousand pounds to assist in carrying forward the operations of the Association. The Canada Company continues to act with its usual munificence, and Baron de Longueuil has generously offered a handsome prize for the best Hereford Bull.

I am happy to notice that liberal premiums continue to be awarded by the Society, for the best essays on Agricultural subjects from all the different counties which have not yet successfully competed. The collection of prize essays will be highly valuable as a book of reference.

An examination of the Annual Prize List will readily show that the Association is extending its liberality, in increasing the number and amount of its premiums, and including everything to which they should be awarded in our present infant state.

The Town of London and the Counties of Middlesex and Elgin have set a noble example, in contributing funds to insure the success of the Exhibition, and I hope that other sections of Canada may follow them in this respect.

The business and profession of the farmer is beginning to assume the commanding position to which it is justly entitled, and I believe that our enlightened young men are fast yielding up their prejudices against it. It is obviously the case that when merchants, manufacturers, and professional men acquire fortunes in their different avocations, they usually retire to farms of greater or less extent. A great proportion of the good men of all ages have followed farming from early life, and to none can the liberties of a country be entrusted with more safety than to its agricultural population; at the same time, it is necessary that every class of the community should be fully represented in our Legislative halls.

I beg to quote from a speech of the hon. Wm. C. Rives, of Virginia, delivered before the New York State Agricultural Society last autumn, the following statement, viz. :—

"That when, in 1840, the whole population of the United States amounted to a little more than 17,000,000, an effective force of 4,629,297 was

employed in the pursuits of agriculture, manufactures and commerce, of that number 3,719,051 or 80 4-10 per cent., were engaged in agriculture; 781,749, or 17 1-10, in manufactures; and 117,607, or 2 5-10 per cent., in commerce. Though these proportions may have varied somewhat since, and will doubtless continue to vary, in a greater or less degree, from time to time, yet nothing is more certain than that for ages to come, agriculture will be the chosen occupation of a large majority of the republican people of America."

In the following paragraph he goes on to state :

"That while agriculture employs, and must long continue to employ, much the largest portion of American labor, it also contributes by its products, much the largest amount to the sum of the National income, wealth. The whole annual produce of industry of every kind in 1840, has been estimated by a learned and ingenious statistician, drawing his conclusions from a document to which I have just referred, (Professor Tucker, on the progress of the United States,) at the sum total of \$1,063,134,736 of which \$684,387,587 were derived from agriculture; \$239,836,194 from manufactures; and \$79,271,068 from commerce; and the balance from mining, the forests, and the fisheries combined."

I think I am safe in saying that the agriculture of the United States has since that time fully kept pace with its commerce, manufactures, and other sources of revenue, from the talent, experience, and research of its great men, which have been brought to bear upon it as well from the opening up of the Western States, although the influx of the precious metals from California and Australia, will have a tendency to alter the relative proportion to their revenues.

From a slight review of the census of Canada in 1851, it may be stated that the effective force of Upper Canada amounts to a little more than two hundred and twenty thousand, of which more than one-third are farmers, about one-third are laborers, of which class nearly all will soon be added to our agricultural population, the remaining third includes the liberal professions, the merchants, manufactures, and all other classes of the community, a large proportion of whom occupy our farms.

I have to apologize for quoting from a speech lately made by the American Minister, at the Court of St. James, before the Royal Agricultural Society of England. He stated that the annual product of the United States is :—

"Two million bales of Cotton.

Two hundred million pounds of Tobacco.

Two hundred million pounds of Rice.

One hundred million bushels of wheat.

And, six hundred million bushels of Maize or Indian Corn."

The United States contained, according to the census of 1850, a population of more than twenty-three millions, I believe three millions are slaves. We should certainly think favorably of Canada, when we find that, although it does not produce rice, except the indigenous kind, and corn only to a limited extent, which might, nevertheless,

be almost increased to any quantity, and at present the deficiency is in some degree supplied by the quantity of peas, which are with us an excellent crop, and already an article of considerable export; in wheat, oats and potatoes we far exceed them in proportion to our numbers, as was shown in the valuable Almanac of the much regretted late Hugh Scobie, for the year 1850.—To each inhabitant there was grown in the United States in the year 1840, of wheat, 4-96, while 6-62 was the proportion in Canada. For the same year of oats, 7-21 in the former, to 9-85 in the latter. Potatoes, 6-35, against 16-62 for Canada. For the year 1847 the quantities stand thus:—

	Wheat.	Oats.	Potatoes.
For the United States	5-50	8-09	4-86
For Canada - - -	10-45	9-75	6-57

Although Upper Canada can boast only of a population less than a million, who, nevertheless, all participate in the privileges of British freedom, it is confidently expected that we shall this year export twelve million bushels of wheat, besides what is required for our own consumption, and our other agricultural exports will also be more than in former years. From the Toronto Almanac of the late Charles Fothergill, I find that Toronto, in 1826, then York, contained only 1,677 inhabitants; in 1839 it had increased to 12,571; and from the census of 1851 I find that it then contained 30,775. Of course it far exceeds the latter number at present.

In 1837 London contained but 708 inhabitants; in 1850 it had increased to 7,032, being nearly tenfold in twelve years. But the census taken the present year shows that within the last fifteen years it has increased fifteen fold. The progress of London, considering its inland and isolated position, is without a parallel, it having no water communication whatever. The Thames upon which it is situated, furnishes but limited water power for mills, having no canals, and, until a few months, no railroads; its rapid advancement has been owing, under the blessing of Providence, to the industry and enterprise of its farmers, its merchants, manufacturers and mechanics, its fine agricultural climate, together with its having, at an early period of its settlement, constructed good roads in every direction.

By referring to the Toronto Almanac of 1849, I think that in 1826 the value of the assessed property of the Upper Province amounted to two millions and a quarter; in 1839 it was more than five millions; in 1848 it was seventeen millions and a half, and again in 1852 it was more than thirty-six millions of pounds. But I must here remark that between the two last dates, the system of assessment was changed, so that although the value of taxable property was greatly increased, the increase was not so much as would appear at first sight.

From Mr. Hutton's valuable census report, I take the liberty of making the following extracts:

"The population of the United States, according to the census of 1850, and exclusive of territorial additions was: .....	23,091,388
Census of 1840 .....	17,067,453

Increase in ten years.. 6,023,935, or 35-27 per cent.

Census of Great Britain	
in 1851 .....	21,121,967
Census of 1841 .....	18,658,372

Increase in ten years.. 2,463,595, or 13 37 per cent.

Census of Ireland, 1841	8,165,124
Census of 1851 .....	6,515,794

Decrease in ten years.. 1,659,330, or 20 per cent.

Census of Upper Canada	
in 1851 .....	952,004
Census of 1841 .....	465,357

Increase in ten years.. 486,647, or 104-58 per cent

From the same source I extract the following statistics of produce and farm stock:

In Upper Canada there are cultivated—	
Of wheat .....	780,385 acres,
producing in 1850 .....	12,675,602 bushels.
Of Indian corn .....	70,040 acres,
producing .....	2,872,413 bushels.
Of peas .....	192,095 acres,
producing .....	2,872,413 bushels:
Of oats .....	421,328 acres,
producing .....	11,186,151 bushels.
Of rye .....	38,965 acres,
producing .....	479,615 bushels.
Number of cows .....	296,924
producing butter .....	15,976,315 pounds.
do. cheese .....	2,226,776 do.
Number of horses .....	263,300
" sheep .....	968,022
" pounds of wool .....	2,699,763
" working oxen .....	103,282
" young cattle .....	254,988
" tons hay .....	681,782
" bushels clover and	
grass seed .....	42,460
" bushels buckwheat .....	639,264
" lbs. flax and hemp .....	50,650
" yards flannel .....	1,828,636
" yards linen .....	14,955
" lbs. hops .....	131,064
" lbs. maple sugar .....	3,581,505
" gallons cider .....	701,612
" bushels barley .....	625,355
" lbs. tobacco .....	774,476
" lbs. beef .....	113,912
" barrels pork .....	310,058
" barrels fish .....	10,251
" swine .....	569,257
" bushels .....	4,987,475

At the following low prices, to which it is to be hoped for the benefit of the producer these articles will never again sink, viz: horses £12 10s; cows £3 15s; oxen £6; young cattle £1 10s; sheep 7s 6d; swine £1; wheat 4s per bushel; rye 2s 6d; barley 3s; oats 1s; Indian corn 2s 6d; buckwheat 2s; peas 3s; hay 40s per ton; grass seed 10s per bushel; flax and hemp seed 3s per bushel; hops 1s; tobacco 6d; maple sugar 4d; butter 7½d; cheese 5d; cider 4d per gallon; flannel 2s per yard; linen 1s 3d; beef £1 10s per 100 lbs; pork £2 10s; and potatoes 1s 3d per bushel; the grand total of the foregoing articles amounted to £13,825,868.

All roots, except potatoes, as you may perceive, were omitted, as well as poultry, eggs, and pot and pearl ashes, as also the valuation of agricultural implements. The improved breeds of cat-



tle and farm stock, for the introduction of which we are indebted to many enterprising men, and which I am happy to say are now being scattered through almost every part of the Province, must have fully doubled the value of the foregoing estimate. These tables furnish no valuation of the square and sawed timber, which is made in Upper Canada, or of the produce of the mines, which two items must add a large amount to our national resources.

The beneficial results of farmers' clubs in agricultural societies are fast attracting general attention, and the reports of them, through the *Canadian Agriculturist*, and Journal of Transactions of the Board and Association &c., are conferring benefits upon our farmers of incalculable value. But the greatest good that will eventually arise from the discussions of these clubs will be the showing of the relative merits of the labor saving machines which are being introduced and manufactured in the Province, and which will enable our agriculturists to contend successfully with any country on the globe. Mr. Rives, from whom I have previously quoted, states "that even in England where labor is so cheap, the recent invention of new implements and the improvement in old ones have caused within the last twelve years a saving of nearly one-half the expenses of English farm labor. What then must be the beneficial effect of their introduction into a country where the price of labor is so exorbitant as in ours. The reduction would be still greater should Mr. Mechi's opinion prove correct, that in seven years steam will supersede horse-power in agriculture."

The system of surface draining which has long been practised, although imperfectly, is, I am happy to say, beginning to give place to subsoil drainage. I hope that the course adopted in Britain immediately after the repeal of the corn laws, in chartering private companies and in obtaining assistance from the Government, may be followed by us. I am happy to recommend to the favorable notice of the Legislature of the Province as well as the public generally, Mr. Charnock, who has established himself at Hamilton, and who is desirous to form a company for the better carrying out of this important object. This gentleman has also introduced a tile machine for subsoil drainage; and he confidently expects that when in complete operation he will be able to furnish tiles for any section of the Province.

Draining about farm houses is no doubt highly conducive to health, and is thought to have a very favorable influence in ameliorating the climate.

I would beg to recommend to the public an excellent article on this subject of which I would urge the republication, by one of our most worthy ex-presidents, Col. Marks:—

"Subsoil and trench ploughing has been practised in some instances on the banks of the Ottawa, and has been attended with astonishing success, and I have no doubt that it is practised in other parts of the Province."

It is to be hoped that many of our indigenous plants may yet be made available in medicine and the arts. For instance gentian, which is a native of Canada, was once a very considerable

article of export, at a time when our exports were trifling to what they are at present, but owing, I believe to a want of care in preparing it for the Chinese Market (no inspector being appointed to examine it) the export of an inferior article ruined it in the market. It is found also in some part of China and Chinese Tartary, and is considered by the inhabitants of those countries a sovereign remedy for all diseases, but from its high price, it is only used among the highest orders. Its use among them was discovered by the Jesuits who went as missionaries to China, and they also discovered it in the forests of Canada, where it grows in large quantities. At this time, with proper care, a good trade might again be carried on in this commodity.

The introduction and growth of chicory is also a matter of importance. This root, if properly prepared, as it is in France and Belgium, and mixed with coffee, makes it more palatable, less expensive and far more healthy as a beverage. Its roots and leaves are also useful in dyeing. It agrees with the climate of Canada, and should be generally cultivated, and I am confident would prove highly remunerative.

When we advert to the Great Exhibition established in Hyde Park, under the patronage of His Royal Highness Prince Albert, and the advantages which Great Britain and her colonies, as well as the whole civilized world would have derived from it, as has been chiefly shown by the lectures delivered upon its results before the Royal Society of Arts in London, by many eminently scientific and practical men, we rejoice that like the fabled phoenix of old, another has risen from its remains, and while it promises greater permanence, we hope it may be successful. Whilst the former Exhibition showed Great Britain the numerous advantages which she possessed over other nations, it at the same time discovered her weaker points, which will be, no doubt, better strengthened and sustained in the present one.

The lectures to which I have just alluded are disseminating a vast amount of valuable information; it would ill become me to express an opinion as to which of them are most advancing the interests of mankind. Sir Henry de la Beche, in his lecture, favorably notices the minerals and metals of Canada. Their development at no distant day must be an object of the greatest importance.

Professor Solley, in lecture No. 7, urges the adoption of a system of professional education for practical men, each man to obtain all that is necessary for him in his own position. In this respect he admits that France is far in advance of Great Britain. I should here remark that every young man commencing his career in life, should carefully consider what profession or calling is best suited to his position and his mental and physical qualifications, then diligently and perseveringly pursue such a course as will enable him to arrive at eminence in it.

The last to which I would refer is that of Prof. Wilson, being lecture No. 13, on agricultural products and implements. As this gentleman was with us at our last Exhibition, and many of

you have had the pleasure of both seeing and hearing him, I think it is unnecessary for me to quote from his lecture; but this, together with his lecture on flax, might be re-published in this country with advantage. Considering the present position of Great Britain, both the Imperial and Provincial Governments should offer bounties for the growth and preparation of flax and hemp in all the colonies where the soil and climate are favorable to them.

In the first Great Exhibition, were shown in many classes only the raw products of the British American colonies, nevertheless, our few manufactures were highly creditable to Canadian skill, industry, and enterprise. We would have been by no means so well represented had it not been for the united exertions of the associations of Upper and Lower Canada. We hope that our success at that time will be an incentive to yet greater effort to give our country a standing and a character among enlightened nations. As the articles necessary for most kinds of manufactures are either produced among ourselves, or can be easily and cheaply obtained, we may reasonably hope to produce articles of such beauty, utility, and cheapness, as would do credit to any young country. It is highly necessary that the exertions of Mr. Logan and other gentlemen, to whom we were, formerly indebted, should again be secured.

With reciprocity in the raw material, and a properly graduated scale of tariff on manufactures to induce their establishment among us, and to continue and enlarge the stream of capital and emigration which we are receiving from Britain, the security of our chartered institutions, of which none have ever yet failed—these, in connection with our already unexampled progress which I have shown, and our acknowledged position in intelligence, science, morals and religion, must satisfy the mind of every intelligent emigrant from Europe, that Canada offers a home for himself and his offspring unrivalled in any part of the world.

While Great Britain and Ireland can boast of having their masses as well educated in all branches of science and literature, as any part of the old world, Germany perhaps excepted, I trust that I shall be fully sustained in the opinion that no class of schools has done as much for the benefit of mankind in general, and their own country in particular, as the Parish Schools of Scotland.

The United States probably contributes the most of any people in proportion to their wealth to the forwarding of benevolent objects and the spread of the gospel in their own country and throughout the world, but in proportion to its numbers no country will at all compare with Great Britain in its contributions to the same praiseworthy objects. When our educational system and religious institutions shall be fully matured I am confident Canada will rank high in this respect.

While we would express our unmingled satisfaction at the general success which has attended the Royal Agricultural Society of England, as well as the sister societies of Scotland and Ireland,

where the concentrated wealth, talent, and experience of many years have been carrying their improvement in agriculture to high perfection, we must respectfully claim for Canadian agricultural institutions, an equal if not superior degree of attainment, when it is considered that our first Exhibition was held at Toronto in 1846.—The Act constituting the board of agriculture was not passed until 1851, and that for the Bureau, which every farming country like ours should possess, until 1852. I hope I may be pardoned for giving it as my opinion, that by the time the Bureau, Board, and Association shall be as many years in existence as those venerable societies to which I have first referred, we shall exceed them in extent and usefulness.

When we consider the immense country embraced within the limits of Canada, in all probability the treaty of reciprocity which has just now been concluded, will in less than a quarter of a century increase the shipping and trading transport tenfold. My expectation upon this point will not, I have reason to hope, meet with the incredulity with which Jacques Cartier was received when he foretold the future importance of Quebec as a seaport, in which his most sanguine expectations were far exceeded.

I would here state that the number of vessels passing through the Welland, St. Lawrence, and Chambly canals in 1850, was thirteen thousand eight hundred and eight, and their tonnage nearly one million two hundred thousand tons. The Welland and St. Lawrence canals are the largest in the world. The Rideau and Ottawa canals being the property of the Imperial Government are not included in the foregoing estimate. I regret that I have not been able to obtain the number of vessels and their tonnage, to and from Montreal and Quebec. I believe, however, that it is an admitted fact that the Ottawa furnishes at least two-thirds of the ocean freight, from these two ports, consisting principally of lumber.

The Ottawa country does not furnish grain for export, because the immense consumption of the lumber trade gives the best market for its absorption. At the same time the valley of the Goodwood, between Bytown and Richmond, produces as good winter wheat, and as large a produce per acre as any section of Upper Canada, and it can boast of as good old country farmers as any part of America.

The constructing of several lines of steamers to ply between Canada and Great Britain, in addition to those already on the line, in connection with our railroads, must do much to secure to Canada a large portion of the carrying trade between North America and Europe.

A careful examination of the tables of trade and navigation, which have been brought out by the Government, will give an idea of the immense traffic that is already carried on in Canada.

Our farmers being all freeholders, their improvements tend only to their own benefit and not that of a landlord. This is calculated to excite a degree of perseverance, and consequently a measure of success, unexampled in the old world.



It is a matter of importance that the suggestion of the Superintendent of Education, in reference to the compilation of an agricultural school book, containing the principles of geology, mineralogy, and chemistry, as bearing upon agriculture, should be immediately carried out, and I hope soon to see it in general use.

Canada has now arrived at that state of advancement which would justify the outlay necessary to the publication of its natural history. Mr. Logan has already collected a vast amount of information bearing upon it, and it would be exceedingly creditable to the Province that an appropriation sufficient to carry out so great a work should at once be made. The State of New York has done itself the highest possible credit in publishing its natural history in all its branches, in eighteen quarto volumes, together with a geological chart, and the work is still progressing.

I have frequently advocated the necessity for procuring a set of tents to our Provincial Exhibition, and I trust that the time has now arrived for the accomplishment of this object.

I have also recommended that twenty-five pounds should be added to the Government Grant to each of the County Societies for Horticultural premiums exclusively, in all the Counties where Horticultural Societies are not already established, and that a like sum be added for premiums on the best farms and gardens in which are observed such a rotation of crops as shall be established by the agricultural board.

I feel assured that the farmers, mechanics, and manufacturers, of the Province, must feel no ordinary degree of satisfaction, in beholding the splendid exhibition here before us, and the consideration of its benefits to the country at large, and particularly to this section of it, must amply reward them for the time, trouble and expense they have so generously bestowed.

The ladies of Upper Canada have again laid this association under many obligations, by their renewed contributions of beauty and utility.

We must acknowledge ourselves much indebted to Col. Askin, Mr. Holmes (the Mayor), Mr. Niles, Mr. Strathy, the Secretary to the Local Committee, and several other gentlemen who have exerted themselves beyond anything we had a right to expect.

The thanks of this association are due to the gentlemen of the Press of London, and of the Province generally, to the Mechanics' Institute, to the Fire Companies, and the different bands for their exertions in favor of the Exhibition.

We feel under many obligations to the citizens generally for their generous hospitality to strangers visiting London on this occasion.

The country is greatly indebted to the Great Western Railroad Company for their generosity in transmitting the articles intended for the Exhibition free of charge, and it is gratifying to find that this great undertaking is likely to prove remunerative.

In conclusion, we must be thankful to a merciful God, while we acknowledge his kindness in having cast our lot in a land of Gospel light and liberty, and under a form of Government which, if properly administered, is not inferior to any, that our merchants, as well as the merchants of the nation to which we belong, are trading with all the distant nations of the earth, and the missionary and the gospel are following in their train. Wherever Britain and her offspring have set their foot and unfurled their banners, civil and religious liberty overspread the land. The fields flow with milk and honey, the arts flourish, education advances, manufactures every where spring into life, and the fields and mines contribute to the comfort and the welfare of mankind. If true to ourselves, and the blessing of God be not withdrawn from us, we must soon become a great, powerful and religious people.

The Band played the Queen's Anthem.

The Hon. Adam Fergusson, seconded by Col. Thomson, proposed a vote of thanks to Mr. Sheriff Treadwell, the President of the Association, for his excellent address, and for the very efficient manner in which he had fulfilled the arduous office of President for the past year.

The motion was carried with great enthusiasm.

The President acknowledged the compliment briefly, and declared the names of the officers appointed for the ensuing year, as given above.

Mr. Holmes, of London, stated that the judges on music had awarded the prizes offered by the London Fire Brigade, as follows:

Woodstock Band, 1st prize. Band of Phoenix Fire Company, London, 2nd prize.

The Secretary, Professor Buckland, then read the list of prizes awarded by the judges, which we append.

As soon as the Secretary had read through a department of the Prize List, the Treasurer commenced paying the same, and a large number were paid the same evening. All who applied were paid promptly before leaving London.

With this evening the Exhibition terminated. The weather was throughout highly favorable for the occasion, and, notwithstanding some unavoidable drawbacks, the Show was on the whole one of the most gratifying and successful which have yet taken place. The receipts at the gates exceeded those at any former Exhibition, there being nearly 2,000 members' badges, and upwards of 25,000 entrance tickets disposed of,—a decisive proof of the growing interest in the Institution.

# PRIZE LIST.

## CLASS A.—BLOOD HORSES.

22 ENTRIES.

JUDGES—G. S. DeLong, A. C. Hamilton, G. Stanton, Oliver Blake.

### Thorough-Bred Stallion.

1 P Schram, London, £7 10s; 2 H Huntingford, East Zorra, £5; 3 J M Graham, London, £2 10s.

### Thorough-Bred 3 years old Stallion.

1 T Horseman, Malden, £5; 2 J & J White, Trafalgar, £3; 3 E B Waite, Ingersoll, £1 10s.

### Thorough-Bred 3 years old Filly.

1 G A Pastee, Malahide, £4; 2 J & J White, Trafalgar, £2 10s.

### Thorough-Bred Mare and Foal.

1 W Balkwill, London, £5.

The 1st Prize for 3 years old Stallion, awarded to T. Horseman, protested against by J. & J. White, on the ground of absence of Pedigree.

## DISCRETIONARY PRIZES IN BLOOD HORSES.

C Baker, Westminster, £1 10s; J & J White, Trafalgar, Yearling Filly, £1.

## CLASS B.—AGRICULTURAL HORSES.

188 ENTRIES.

JUDGES.—Alex. Alcorn, Richard Mead, John Harland, Stephen Powell.

### Stallion for Agricultural purposes.

1 W Robson, London, £7 10s; 2 W. Shipley, London Township, £5; 3 R Swalwell, Cayuga, £2 10s.

### Heavy Draught Stallion.

1 W B Crew, Toronto, £7 10s; 2 David Rowntree, York Township, £5; 3 John Crawford, Scarborough, £2 10s.

### Three year old Stallion.

1 Richard Williams, Dereham, Oxford, £5; 2 Joseph Hughes, London, £3; 3 John McNeil, Darlington, £1 10s.

### Two year old Stallion.

1 John Gardhouse, Etobicoke, £3; 2 W Cochrane, Pickering, £2; 3 J J McLaughlan, Malahide, £1.

### Three year old Filly.

1 Samuel Peters, London, £4; 2 Leonard Salmon, Binbrook, £2 10s; 3 Christopher Waugh, London, £1 10s.

### Two year old Filly.

1 W Patrick, London, £3; 2 Thomas Bourn, Westminster, £2; 3 Thomas Bucison, Blanchard, £1.

### Span Matched Carriage Horses.

1 M Zimmerman, Niagara Falls, £4; 2 David Collins, Vienna, £3; 3 J Coote, London, £1 10s; 4 F Mead, Norfolk, £1.

### Span of Draught Horses.

1 Geo. Jones, Charlotteville, £4; 2 Peter Clayton, Malahide, £3; 3 Joseph Walker, Lobo, £1 10s.

Brood Mare and Foal, or evidence that the Foal has been lost.

1 Jesse Trull, Darlington, £5; 2 H Stonehouse, Goderich, £3; 3 Jacob McMichael, Townsend, £1 10s.

### Saddle Horse.

1 W Applegarth, Flamboro, £2; 2 Levi Sovereign, Windham, £1 10s; 3 W Lawrason, London, £1.

## DISCRETIONARY PRIZES IN AGRICULTURAL HORSES.

### Yearling Colt.

1 John Little, London, £1 10s; 2 Charles G Moore, London, 15s.

### One year old Stallion.

H Stonehouse, for Agricul. Society, Goderich, £2 Shetland Pony.

Æneas S Kennedy, Hamilton, 10s.

The Judges have great pleasure in reporting that, speaking generally, the animals that came under their inspection were of far superior quality to what they had anticipated. The Agricultural Stallions were excellent. The heavy Draught Stallions might fairly challenge comparison with any on the continent of America. The horse to which they awarded the first premium combines strength and activity in a greater degree than they ever before witnessed, and they confidently recommend him to the patronage of breeders of horses in the Province. They must express regret that the horse No. 2, (owned by James Bell, Etobicoke), should have been entered in this class, as he was certainly out of place, but as a stallion to propagate agricultural horses, he is deserving of high recommendation. In the class Matched Carriage Horses, in which no less than thirty-three were entered, they had no difficulty in deciding upon the best, which are a pair of decidedly beautiful animals, but they were very much perplexed in making a selection for second and third premiums, and the owner of a pair of sorel horses, No. 16, (J. Mead, Norfolk), may perhaps consider himself aggrieved that a premium was not awarded to him, as their points, and those of the two spans to which prizes were awarded, were so nearly equal. They recommend that a special premium be paid to him. The Brood Mares were good. The Saddle Horses were dashing animals, and the one to which they awarded the first prize, excited not only general attention, but unanimous admiration. [Signed by all the Judges.]

## CLASS C.—DURHAMS.

80 ENTRIES.

JUDGES—Messrs. D. W. Freeman, L. F. Allen, W. Mason, T. Stock, Isaac Askew, and T. Douglass. Bull.

1 Walter Welford, Woodstock, £10; 2 John Jarvis, Trafalgar, £6; 3 James Armstrong, for County of Elgin Agricultural Society, £4; 4 J Sharpe, Lobo, £2; Discretionary prize, entered too late, Matthew Jonas, Darlington, £6.

### Three years old Bull.

1 W H Beresford, Whitechurch, £8; 2 E W Thomson, York, £5; 3 Daniel Oneill, Paris, £3; 4 George Henry, Aldboro', £1 10s.

### Two years old Bull.

1 Hon A Fergusson, Flamboro', £6; 2 J McGuffin, London, £4; 3 W Balkwill, London, £2 5s; 4 David Main, Westminster, £1 5s.

### One year old Bull.

1 J P Wheeler, Scarborough, £5; 2 A Rutledge, London, £3; 3 G Bruce, Dumfries, £2; 4 H Backhouse Malahide, £1.

### Bull Calf, under 1 year.

1 F W. Stone, Guelph, £4; 2 Ralph Wade, junr. Cobourg, £2 10s; 3 J P Wheeler, Scarborough, £1 10s; 4 Sir E W Poore, Cobourg, 15s.

Discretionary prize, having arrived too late to compete, Matthew Jonas, Darlington, £2 10s.



## | Cow.

1 J P Wheeler, Seaboro', £5; 2 J S Balkwill, London, £3; 3 Ralph Wade, Jr., Cobourg, £2; 4 James Williams, Dereham, £1 5s.

*Three years old Cow.*

W Balkwill, London, £4.

*Two years old Heifer.*

1 Hon A Fergusson, Flamboro, £3; 2 George Rod-dick, Hamilton, £2.

*One year old Heifer.*

1 W Miller, Pickering, £2 10s; 2 do do, £1 10s; 3 G Miller, Markham, £1; 4 James Watson, Ingersoll, 10s. S. Atkinson, Nelson, commended.

*Heifer Calf, under 1 year.*

1 A C Hamilton, St. Catharines, £1 10s; 2 do do, £1; 3 G Lish, Brownville, 10s.

The Committee on Short-Horn Cows wish particularly to note a cow belonging to A. C. Hamilton, Esq., of St. Catharines, as a remarkable specimen of longevity and stamina in this breed of cattle. This cow, "Lady Darlington," was imported in 1836, at the age of two years. She is therefore twenty years old. She has been a regular and constant breeder ever since, and is believed to be now in-calf. Her stock have uniformly been good, and some of the prize animals of the present Show are descended from her.

## CLASS D.—DEVONS.

46 ENTRIES.

JUDGES—J. P. Wheeler, Mr. McKellar, J. B. Carpenter John Dow, Richard Pascoe.

*Bull.*

1 D W Freeman, Windham, £10; 2 J M Minto, Haldimand, £6; 3 W H Locke, Yarmouth, £4.

*Two years old Bull.*

1 Robert Ferrie, Doon, £6; 2 W H Locke, Yarmouth, £4.

*One year old Bull.*

1 T Thompson, Adelaide, £5; 2 John Saul, Nis-souri, £3.

*Bull Calf, under 1 year.*

1 R Ferrie, Doon, £4; 2 W H Locke, Yarmouth, £2 10s; 3 Daniel Tye, Wilmot, £1 10s; 4 do do, 15s.

*Cow.*

1 W H Locke, Yarmouth, £5; 2 do do, £3; 3 Robert Ferrie, Doon, £2; 4 W H Locke, Yarmouth, £1 5s.

*Three years old Cow.*

1 W H Locke, Yarmouth, £4; 2 do do, £2 10s 3 Robert Ferrie, Doon, £1 10s.

*Two year old Heifer.*

1 W H Locke, Yarmouth, £3; 2 do do, £2; 3 do do, £1 5s; 4 Daniel Tye, Wilmot, 15s.

*One year old Heifer.*

1 W H Locke, Yarmouth, £2 10s; 2 do do, £1 10s; 3 do do, £1; 4 Robert Ferrie, Doon, 10s.

*Heifer Calf, under 1 year.*

1 W H Locke, Yarmouth, £1 10s; 2 do do, £1; 3 do do, 10s; 4 Robert Ferrie, Doon, 5s.

## CLASS E.—HEREFORDS.

ONLY 1 ENTRY IN THIS CLASS.

*Hereford Bull.*

County of Oxford Agricultural Society, £10.

## CLASS F.—AYRSHIRES.

27 ENTRIES.

JUDGES—Baron de Longueuil, and Messrs. W. Miller, P. R. Wright, J. W. Huff, and David Smellie.

*Bull.*

1 R Thompson, London, (particularly commended) £10; 2 Late J B Ewart's Estate, Ancaster, £6.

*Three years old Bull.*

R L Denison, Toronto, £8.

*Two years old Bull:*

James Gilmour, Flamboro West, £6.

*One year old Bull.*

Late J B Ewart's Estate, Ancaster, £5.

*Bull Calf, under one year.*

1 Late J B Ewart's Estate, Ancaster £4; 2 R. Thompson, London, £2 10s; 3 Late J B Ewart's Estate, Ancaster, £1 10s.

*Cow.*

1 R L Denison, Toronto, £5; 2 Late J B Ewart's Estate, Ancaster, £3; 3 J B Askin, London, £2; 4 Late J B Ewart's Estate, Ancaster, £1 5s.

*Two year old Heifer.*

Late J B Ewart's Estate, Ancaster, 4th prize, 15s.

*Heifer Calf, under 1 year.*

1 J B Askin, London, £1 10s; 2 do do, £1; 3 W Laimont, London, 10s.

## DISCRETIONARY PRIZES—GALLOWAYS.

4 ENTRIES.

*Two year old Heifer.*

George Miller, Markham, £1 15s.

*Yearling Bull, imported this year.*

1 George Roddick, Cobourg, £5 and Diploma.

*Two year old Heifer.*

1 George Roddick, Cobourg, £3; 2 do do, £2.

## CLASS G.—GRADE CATTLE.

91 ENTRIES.

JUDGES—Messrs. T. W. Clarke, W. D. Harrison, D. R. Springer, R. Adams and A. Pass.

*Cow.*

1 John Stiles, London Township, £5; 2 William Shore, St. Thomas, £3; 3 R Down, Southwold, £2; 4 James Watson, Ingersoll, £1 5s.

*Three years old Cow.*

1 W Shore, St. Thomas, £4; 2 R Pierson, East Oxford, £2 10s; 3 W. Bishop, East Zoria, £1 10s; 4 R Pierson, East Oxford, £1.

*Two years old Heifer.*

1 A Vickers, London, £3; 2 W Balkwill, London, £2; 3 G. Belton, London, £1 5s; 4 Chris. Coombes, London, 15s.

*One year old Heifer.*

1 W Balkwill, London, £2 10s; 2 A Kerr, Westminster, £1 10s; 3 A McDonald, London, £1; 4 A Vickers, London, 10s.

*Heifer Calf, under 1 year.*

1 R Pierson, East Oxford, £1 10s; 2 C. Coombes, London, £1; 3 Alfred Hebelthwaite, London, 10s; 4 R Pierson, East Oxford, 5s.

**CLASS H.—FAT AND WORKING CATTLE,  
ANY BREED.**

55 ENTRIES.

JUDGES—W. N. Alger, John Wade, James Pile, Peter Woods, Hiram Phelps.

*Ox or Steer.*

1 E Smith, Gore, £7 10s; 2 John Little, London Township, £5; 3 B Markell, Niagara, £3.

*Cow or Heifer.*

1 J Elson, London, £7 10s; 2 Jonathan Gould, Scarboro, £5; 3 James Capner, St. Catharines, £3.

*Yoke of Working Oxen.*

1 Zaccheus B Choate, Glanford, £5; 2 W Shipley, London Township, £3; 3 George Robson, London Township, £2.

*Team of Oxen.*

Not less than 10 Yoke, from one Township, the property of any number of persons, Alexander Kerr, and others, Westminster, £10.

DISCRETIONARY PRIZES IN FAT AND WORKING CATTLE.

*Yoke of Steers.*

1 George Belton, London, £3; 2 David Conway, London, £2.

*Pair of Twin Steers.*

Kirkwood and Laurie, Ancaster, recommended.

EXTRA ENTRIES—ANIMALS, ANY SORT.

*Three Pointers.*

Thomas Leach, Toronto, 10s.

*Newfoundland and Spaniel Dogs.*

1 B Brown, St. Thomas, 10s; 2 do do, 5s.

*Rabbits.*

W S Essery, London, 5s.

**CLASS I.—SHEEP.**

LEICESTERS.—194 ENTRIES.

JUDGES—James Cowan, W. Oliver, Jonathan Scott, John Robins, John Iles.

*Ram, 2 shears and over.*

1 James Dixon, Clarke, £4; 2 Geo. Miller, Markham, £2; 3 J P Gage, Wellington Square, £1; 4 W Miller, Pickering, 15s.

*Shearling Ram.*

1 George Miller, Markham, £4; 2 James Dixon, Clarke, £2 10s; 3 Joseph Coulson, London, £1.

*Ram Lamb.*

1 James Dixon, Clarke, £2; 2 Geo. Miller, Markham, £1; 3 W Shore, St. Thomas, 10s.

*Two Ewes, 2 shears and over.*

1 Jas. Dixon, Clarke, £4; 2 W Miller, Pickering, £3; 3 George Miller, Markham, £1 10s.

*Two shearling Ewes.*

1 J Simpson, Darlington, £3; 2 W Miller, Pickering, £2; 3 George Miller, Markham, £1.

*Two Ewe Lambs.*

1 Geo. Miller, Markham, £1 10s; 2 C A Jordison, Port Hope, £1; 3 George Miller, Markham, 10s.

SOUTHDOWNS—44 ENTRIES.

JUDGES—Messrs. S. Clarke, Isaac Garbutt, R. Pierson, John Cade and Levi Wilson.

*Ram, two shears and over.*

1 E Jones, Stamford, Welland, £4; 2 J Spencer, Whitby, £2 10s; 3 J Kerr, Drummondville, £1 10s.

*Shearling Ram.*

1 J Spencer, Whitby, £4; 2 Joseph Piers, East Oxford, £2 10s; 3 Arnold Burrowes, Brantford, £1.

*Ram Lamb.*

1 J Spencer, Whitby, £2; 2 do do, £1; 3 W Ash, Thorold, 10s.

*Two Ewes, 2 shears and over.*

1 E Jones, Stamford, £4; 2 W Ash, Thorold, £3; 3 Arnold Burrowes, Brantford, £1 10s.

*Two shearling Ewes.*

1 E Jones, Stamford, £3; 2 E W Thomson, Toronto, £2.

*Two Ewe Lambs.*

1 E Jones, Stamford, £1 10; 2 T Baker, Norfolk, £1.

MERINOS AND SAXONS—17 ENTRIES.

JUDGES—Messrs. Samuel Clarke, Isaac Garbutt, Robt. Pierson, John Card, and Levi Wilson.

*Ram, 2 shears and over.*

1 J Langstaff, Vaughan, £4; 2 do do, £2 10s; 3 do do do, £1.

*Shearling Ram.*

1 Jacob Rymal, Barton, £2; 2 do do, £1.

*Two Ewes, 2 shears and over.*

1 J Rymal, Barton, £4; 2 H Vansittart, Blanford, £3.

*Two shearling Ewes.*

1 J Rymal, Barton, £3; 2 H Vansittart, Blanford, £2.

*Two Ewe Lambs.*

H Vansittart, Blanford, £1 10s.

FAT SHEEP—11 ENTRIES.

JUDGES—Messrs. Richard Allen, Darlington; Samuel Widdifield, Uxbridge; and Geo. Wallis, Mariposa.

*Two Fat Wethers.*

1 Chris. Walker, London, £3; 2 T Trebilecock, Toronto, £2; 3 C Tuckey, London, £1.

*Two Fat Ewes.*

1 George Miller, Markham, £3; 2 do do, £2.

DISCRETIONARY ENTRIES—SHEEP—19 ENTRIES.

JUDGES—The same as for Fat Sheep.

*Cotswold's 2 shear Ram.*

1 Wm Miller, Pickering, £4; 2 George Miller, Markham, £2 10s.

*Shearling Ram.*

William Miller, Pickering, £3 10s.

*Two Ewes.*

George Miller, Markham, £4.

*Cheviots, 2 shear Ram.*

George Roddick, Hamilton, Northumberland, £4.

*Pair of Cheviot Ewes.*

George Roddick, Hamilton, Northumberland £3.

*Three Ram Lambs.*

George Roddick, Hamilton, Northumberland, £3.

Mr. Samson Baker, of Charlotteville, Norfolk, had some very superior specimens of Southdown Sheep, which appear to have been accidentally overlooked by the Judges. His Rams and Ewes were pronounced by several persons well acquainted with such matters, as having excellent qualities as breeding stock. Mr. Baker has put himself to much trouble and expence in importing good stock from England; some from the well known Earl Ducie.

The Judges are of opinion that the Cotswold sheep would make an excellent cross with the Leicesters. and are well worthy of a prize.



## CLASS J.—PIGS.

LARGE BREED—36 ENTRIES.

JUDGES:—Messrs. John Kerr, Pinkham, and John Card.

*Boar one year and over.*

1 G McKinley, Trafalgar, £5; 2 G McKinley, Trafalgar, £3; 3 C A Jordison, Port Hope, £2.

*Breeding Sow one year and over.*

1 W Moore, London, £3; 2 John Stiles, London, £2; 3 C A Jordison, Port Hope, £1.

*Boar of 1854.*

1 John Stiles, London, £3; 2 W Moore, London, £2; 3 C A Jordison, Port Hope, £1.

*Sow of 1854.*

1 A Pegler, London, £2; 2 W Moore, London, £1 10s; 3 Joseph Coulson, London, £1.

SMALL BREED—45 ENTRIES.

JUDGES:—Messrs. W. Thomson, Isaac Anderson, and John Ritson.

*Boar one year and over.*

1 Peter Hagle, Dereham, £5; 2 S Baker, Norfolk, £3; 3 William Harris, Dereham, £2.

*Breeding Sow, one year and over.*

1 W Moore, London, £3; 2 Thos Weldin, Westminster, £2; 3 J Stephens, Westminster, £1.

*Boar of 1854.*

1 W J Heyton, London, £3; 2 Sampson Baker, Charlotteville, £2; 3 Sampson Baker, Charlotteville, £1.

*Sow of 1854.*

1 W Moore, London, £2; 2 W Moore, London, £1 10s; 3 J Stephens, Westminster, £1.

DISCRETIONARY PRIZES—FAT PIGS.

1 A Pegler, London, £3; 2 A Kerr, Westminster, £2; 3 W Moore, London, £1.

## CLASS K.—POULTRY.

170 ENTRIES.

JUDGES:—W. B. Crew, Toronto; Col. Saunders, Guelph; W. N. Hatt.

*Pair of Dorkings.*

G Miller, Markham, £1.

*Pair of Polands.*

1 R Smith, London, £1; 2 Dr Case, Hamilton 10s.

*Pair Large Breed Fowls.*

1 Dr Case, Hamilton, £1; 2 W A Ferguson, Hamilton, 10s.

*Pair of Jersey Blues.*

T Davis, Saltfleet, £1.

*Pair of Cochins Chinu, Malay or Chittegong Fowls,*

1 Dr Case, Hamilton, £1; 2 J C Meredith, London, 10s.

*Pair of Bantams.*

1 H Farmer, East Zorra, £1; 2 W H Essery, London, 10s.

*Pair of Turkeys, White and Coloured.*

1 S H Parke, London, £1; 2 J Kerr, Drummondville, 10s.

*Pair of Large Geese.*

1 John Kerr, Stamford, £1; 2 C S Horne, London, 10s.

*Pair of Muscovy Ducks.*

1 Joseph Lamb, London, £1; 2 R Smith, 10s.

*Pair Common Ducks,*

1 George Miller, Markham, £1; 2 Geo. Miller, Markham, 10s.

*Pair of Guinea Fowls.*

1 S H Parke, London, £1; 2 W H Essery, London, 10s.

*Collection of Pigeons.*

1 C N Sims, London, £1; 2 J Wilson, London, 10s.

*Lot of Poultry owned by Exhibitor.*

1 Joseph Lamb, London, £2; 2 Joseph Lamb, London, £1.

DISCRETIONARY PRIZES.

*Black Spanish Fowles.*

Geo. Miller, Markham, £1.

*Collection of Poultry.*

Dr Case, Hamilton, £2 10s.

*Bolton Greys.*

Dr Case, Hamilton, £1 5s.

The Judges have much pleasure in reporting the present show of Poultry to be far superior to any thing which has yet appeared in the Province, both with regard to the number of entries, the varieties of the birds, and their excellence.

The subjoined classification will show the premiums awarded in accordance with the published list, but it is much to be regretted that it did not embrace a greater variety in each species, and we trust your society will pardon us for recommending some changes for future exhibitions. To begin with—

Dorkings, we would recommend prizes for both spangled and white.

Polands, we would recommend prizes for four varieties,—black, white, golden and silver.

Game fowls ought to stand high in your list.

Large Breed to be struck out as mongrels.

Cochin China, Shanghae, Cauton, Imperials and Bramah Pootra to come all under one class—

merely divided into buff, black, white and grey,—being in reality the same birds under different names.

Black Spanish ought to have prizes as 1st class birds.

Black Java do do do do

Bolton Grey do do do do

Bolton Bay do do do do

Hamburg fowls are an excellent variety.

Jersey Blues are also good.

Dominique do do

Bantams should be divided into smooth and feathered

Nearly all the above varieties have been exhibited to us, but many have been passed over, as we hardly feel justified in granting them premiums although deserving of it.

With Turkeys we would recommend in future a special prize for the wild variety, several of which were exhibited perfectly domesticated. With Ducks we recommend, in addition to the present prize, two new ones,—for Aylesbury and Poland ducks.—With Geese we also recommend two additional prizes,—for Bremen, and Hong Kong or Chinese geese.

The other prizes to remain as they are, with the exception of that numbered K. 13, in the present list, which has given rise to misconception on the part of many exhibitors,—some imagining that the "Best Lot of Poultry, owned by an Exhibitor,"

meant the whole number he might have entered in various classes, while others thought it meant a lot put up in one pen, of either one, or many kinds specially entered for that prize.

To obviate this we have ventured to read it both ways, and trust your committee will bear us out in it, taking into consideration the great excellence and the number of birds shown.

And we recommend that Dr. Case, of Hamilton, be awarded a premium of £2 10s., and that the thanks of the Society be given to him.

And further, we cannot close this report, without expressing our great satisfaction for the extreme courtesy and assistance of J. H. Horne, Esq., who had the superintendence of Class K.

[Signed] NORMAN SAUNDERS.  
W. B. CREW.  
W. N. HUTT.

**CLASS L.—AGRICULTURAL PRODUCTIONS.**  
294 ENTRIES.

**JUDGES:—**B. Shaw, Jacob Snider, John Harvey, John Watson, David Christie.

*Canada Company's Prize of £25.*

For the best 25 bushels of Fall Wheat, J Freeman, West Flamboro, £25.

*Two bushels of Winter Wheat.*

1 J Gilbert, Belleville, £2 10s; 2 J Crumback, Waterloo, £1 15; 3 L R Carpenter, Middletown, £1 5s.

The Judges remark that the samples in this class are very superior, and do credit to Canada.

*Two bushels of Spring Wheat.*

1 H Kennedy, London, £2 10s; 2 J S Armstrong, Eramosa, £1 15s; 3 Joseph Sisley, York, £1 5s.

*Two bushels Barley, Two rowed.*

1 Joseph Coulson, London, £1 10s; 2 T Davis, Saltfleet, £1; 3 D Perly, Bantford, 10s.

*Two bushels, Six rowed.*

1 H Kennedy, London, £1 10; 2 C Kennedy, London, £1.

*\* Two bushels Rye.*

1 J Lafferty, Senr., West Flamboro', £1 10s; 2 J Lafferty, Junr., West Flamboro', £1; 3 J Anderson, Hamilton, 10s.

*Two bushels of Oats, white.*

1 Jno Kerr, Stamford, £1 10s; 2 J Anderson, Hamilton, £1; 3 W Garbutt, East Oxford, 10s.

*Two bushels of field Peas.*

1 G Smith, East Zorra, £1 10s; 2 J Bobier, Dunwich, £1; 3 John Gilbert, Belleville, 10s.

*Two bushels of Marrowfat Peas.*

1 J Cunningham, Clarke, £1 10s; 2 John Gilbert, Belleville, £1; 3 John Pegler, London, 10s.

*Two bushels Indian Corn in the ear, white.*

1 A Shaw, Toronto, £1 10s; 2 R Stevens, Westminster, £1; 3 R Bugler, London, 10s.

*Two bushels yellow Corn.*

1 A Shaw, Toronto, £1 10s; 2 J Wilson, London, £1; 3 W Warden, London, 10s.

*Bushel of Timothy Seed.*

1 A Shaw, Toronto, £2; 2 John Grant, Westminster, £1 10s; 3 H Girouard, Hamilton, £1.

*Bushel of Clover Seed.*

1 B C Shaw, Norfolk, £2; 2 H Kennedy, London, £1 10s.

*Best Bushel Flax Seed.*

1 J S Armstrong, Eramosa, £1 10s; 2 W Garbutt, East Oxford, £1.

*Best Swedish Turnip Seed, from transplanted bulbs, not less than 20lbs.*

1 J Coulson, London, £1 10s; 2 D Fisher, Bowmanville, £1; 3 D Fisher, Bowmanville, 10s.

*Best Bale of Hops, not less than 112lbs.*

1 J Russell, London, £5; 2 Geo Belton, London, £3; 3 W Woods, Dorchester, £2.

*Best Bushel Pinkeye Potatoes.*

1 J Moore, Fullerton, 15s; 2 J Wheaton, London, 10; 3 A Kerr, Westminster, 5s.

*Best Bushel of any other sort.*

1 J Wheaton, London, 15s; 2 R Bugler, London, 10; 3 J Williamson, Woodstock, 5s.

*Best Bushel Swede Turnips.*

1 F W Stone, Guelph, 15; 2 F W Stone, Guelph, 10s; 3 A Beattie, Westminster, 5s.

*Best Bushel of White Globe Turnips.*

W Warner, London, 15s.

*Best Bushel of Aberdeen Yellow Turnips.*

G Robson, London, 15s.

*Best 20 roots Red Carrots.*

1 A Baker, Guelph, 15s; 2 D Fisher, Bowmanville, 10s; 3 J Sisley, York, 5s.

*Best 20 roots White or Belgian Carrots.*

1 T Weldon, Westminster, 15s; 2 Chris Coombes, London, 10s; 3 J Sisley, York, 5s.

*Best 12 roots Mangel Wurzel (Long Red).*

1 A Shaw, Toronto, 15s; 2 F W Stone, Guelph, 10s; 3 J Sisley, York, 5s.

*Best 12 roots Yellow Globe Mangle Wurzel.*

1 W B Harding, Nissouri, West, 15s; 2 F W Stone, Guelph, 10s; 3 J Hollandsbury, Woodstock, 5s.

*Best 12 roots Sugar Beet.*

1 Alfred Baker, Guelph, 15s; 2 J Sisley, York, 10s. 3 A Shaw, Toronto, 5s.

*Best 20 roots Parsnips.*

1 A Baker, Guelph, 15s; 2 W Warner, London, 10s; 3 J Pegler, London, 5s.

*Best 20 roots Chicory.*

1 A Shaw, Toronto, 10s; 2 J. Sisley, York, 7s 6d;

*Best 4 large Squashes for Cattle.*

1 A Shaw, Toronto, 15s; 2 G Tyas, London, 10s.

*Best 20lbs Tobacco, growth of Canada West.*

1 David Rose, Hamilton, £1; 2 Geo Moody, Howard, 10s; 3 James Fisher, Chatham, 5s.

*Best Broom Corn Brush, 28lbs.*

1 John Lemon, Stamford, £1; 2 E Welding, Yarmouth, 15s; 3 John Kerr, Stamford, 10s.

*Best 2 Pumpkins (yellow field).*

1 R Stevens, Westminster, 10s; 2 W Balkwill, London, 7s 6d; 3 James Brown, Elgin, 5s.

*Best Peck of White Field Beans.*

1 John Lemon, Stamford, 15s; 2 T Weldon Westminster, 10s; 3 John Lemon, Stamford 5s.

**EXTRA ENTRIES—AGRICULTURAL PRODUCTS.**

Peter Jones, Brantford, rice or pop corn, 5s; S Blain, Ancaster, buckwheat, 10s; A Shaw, Toronto, mammoth green pumpkins, 15s; G Walker, Zorra, long yellow mangel wurzel, 15s; F W Stone, Guelph, tares 15s; E Welding, Yarmouth, Broom Corn, 15s; G Moody, Howard, tobacco plant, 5s.



## CLASS M.—HORTICULTURAL PRODUCTS.

## Fruits.

245 ENTRIES.

JUDGES—Rev. F. Evans, W Mundie, G Murton.

*Best 20 Varieties of Apples, named (6 of each).*

1 W Baby, Chatham, 15s; 2 G Leslie, Toronto, 10s; 3 J Wilson, London, 5s.

*Best 12 Table Apples, named (Fall-sort).*

1 John Bryce, London, 10s; 2 John Bryce, London, 7s 6d; 3 A Case, Barton, 5s.

*Best 12 Table Apples, named (Winter sort).*

1 E Green, London Township, 10s; 2 A Case, Barton, 7s 6d; 3 J Brown, South Yarmouth, 5s.

*Best 12 Baking Apples, named.*

1 T Shore, Westminster, 10s; 2 J Harris, London, 7s. 6d.; 3 Judge Campbell, Niagara, 5s.

*Best 20 Varieties of Pears, named (3 of each).*

1 G Leslie, Toronto, 15s; 2 James Dougall, Windsor 10s; 3 James Dougall, Windsor, 5s.

*Best 12 Table Pears, named (Fall sort).*

1 Judge Campbell, Niagara, 10s; 2 L Sovereign Townsend, 7s 6d; 3 Judge Campbell, Niagara, 5s.

*Best 12 Table Pears, named (Winter sort).*

1 E Green, London; 10s; 2 H Girouard, Hamilton 7s 6d; 3 S Blair, Ancaster, 5s.

*Best dozen Plums, dessert, named.*

1 G Leslie, Toronto, 10s; 2 Henry Ferres, Lobo, 7s 6d; 3 W Barker, London, 5s.

*Best dozen Baking Plums, named.*

1 John McCarthy, Stratford, 10s; 2 John McCarthy, Stratford, 7s 6d; 3 A Baker, Guelph, 5s.

*Best quart of Damsons. English.*

1 E Jones, Stamford, 10s; 2 W Webb, Southwold, 7s 6d.

*Best 12 Peaches, grown in open air, named.*

1 G W Boggs, St. Thomas, 10s; 2 Henry Girouard, Hamilton, 7s 6d; 3 Judge Campbell, Niagara, 5s.

*Best 20 Varieties of Peaches, grown in open air, 3 of each.*

1 H Girouard, Hamilton, 15s; 2 ten varieties from Mr. McDougall, very good; 3 basket of Peaches from Capt Broughton, Michigan, large and fine, highly commended.

*Best 12 Quinces.*

1 Henry Girouard, Hamilton, 10s; 2 G Leslie, Toronto, 7s 6d; 3 Alex Shaw, Toronto, 5s.

*Best 4 clusters of Grapes, hot-house.*

W B Jarvis, Toronto, 10s.

*Best 4 clusters Black Hamburgh, hot-house.*

W B Jarvis, Toronto, 10s.

*Best 4 clusters Black Grapes, grown in open air.*

1 R Biddulph, Westminster, 10s; 2 J Lewis, Saltfleet, 7s 6d; 3 R Bugler, London, 5s.

*Best 4 clusters White Grapes, grown in open air.*

1 W Webb, Southwold, 10s; 2 T J Humphreys, Toronto, 7s 6d.

*Best 4 clusters of Grapes, of any other sorts.*

1 W Warner, London, 10s; 2 T Shore, Westminster, 7s 6d; 3 Ashley Hollerspeck, Ontario Co, N Y., 5s.

*Best and heaviest 2 bunches of Grapes.*

1 W B Jarvis, Toronto, 10s; 2 W B Jarvis, Toronto, 7s 6d.

*Best collection of Grapes, grown in open air.*

1 T J Humphreys, Toronto, 15s; 2 R Smith, London, 10s.

*Best Water Melons.*

1 E Welding, Yarmouth, 10s; 2 G Tyas, London, 7s 6d; 3 H Girouard, Hamilton, 5s.

*Best Musk Melon, of any sort.*

1 T J Humphreys, Toronto, 10s; 2 H Girouard, Hamilton, 7s 6d; 3 S S Pomeroy, Westminster, 5s.

*Best 12 Tomatoes.*

1 Mrs Moore, London, 10s; 2 R Bugler, London, 7s 6d; 3 J Pegler, London, 5s.

*Best assorted collection of Tomatoes.*

1 H Girouard, Hamilton, 15s; 2 R Bugler, London, 10s; 3 John Lemon, Drummondville, 5s.

## VEGETABLES—105 ENTRIES.

JUDGES—Messrs. G Leslie, C K Barker, and Sampson Baker.

*Best 12 roots of Salsify.*

1 Alex Shaw, Toronto, 10s; 2 Alex Shaw, Toronto, 7s 6d; 3 S S Pomeroy, Westminster, 5s.

*Best 4 heads of Brocoli.*

R Bugler, London, 10s.

*Best 4 heads Summer Cabbage.*

1 Chris Coombes, London, 10s; 2 S S Pomeroy, Westminster, 7s 6d; 3 J Pegler, London, 5s.

*Best 4 heads Winter Cabbage.*

1 D Fisher, Bowmanville, 10s; 2 W Thompson, York Township, 7s 6d; 3 Alex Shaw, Toronto, 5s.

*Best 4 sorts Winter Cabbage, including Savoy.*

1 Chris Coombes, London, 15s; 2 S S Pomeroy, Westminster, 10s.

*Best 12 Carrots for Table.*

1 A Baker, Guelph, 10s; 2 W Thompson, York Township, 7s 6d; 3 W Moore, London, 5s.

*Best 12 Early Horn Carrots.*

1 A Baker, Guelph, 10s; 2 R Bugler, London, 7s 6d; 3 G A Hatton, London, 5s.

*Best 12 roots White Celery.*

R Bugler, London, 10s.

*Best dozen Capsicums.*

1 L M Clench, London, 10s; 2 R Bugler, London, 7s 6d; 3 Geo Cooke, London, 5s.

*Best collection Capsicums.*

R Bugler, London, 10s.

*Best 6 Purple Egg Plants.*

1 J Pegler, London, 10s; 2 S S Pomeroy, Westminster, 7s 6d; 3 L M Clench, London, 5s.

*Best 12 Blood Beets.*

1 J Pegler, London, 10s; 2 W Balkwill, London 7s 6d; 3 S S Pomeroy, Westminster, 5s.

*Best Peck of White Onions.*

1 O Humble, Caradoc, 10s; 2 R Bugler, London, 7s 6d; 3 D Fisher, Bowmanville, 5s.

*Best Peck of Yellow Onions.*

1 R Bugler, London, 10s; 2 Chas Humble, Caradoc, 7s 6d; 3 Thomas Weldon, Westminster, 5s.

*Peck of Red Onions.*

1 Thomas Weldon, Westminster, 10s; 2 D Fisher, Bowmanville, 7s 6d; 3 R Bugler, London, 5s.

*Peck of Early Potatoes for seed.*

1 D Fisher, Bowmanville, 10s; 2 do do, 7s 6d; 3 J Pegler, London, 5s.

*Best and greatest variety of early Potatoes.*

1 Alex. Shaw, Toronto, 15s; 2 D Fisher, Bowmanville, 10s; 3 R Bugler, London, 5s.

*Four Table Squashes.*

1 S S Pomeroy, Westminster, 10s; 2 J Pegler, London, 7s 6d.

*Best and greatest variety of Vegetables.*

R Bugler, London, 10s.

FLOWERS.

JUDGES—Rev F Evans, W Mundie, G Murton.

*Best dozen Dahlias, named.*

1 G Leslie, Toronto, 10s; 2 Judge Campbell Niagara, 7s 6d.

*Best and largest collection of Dahlias.*

1 G Leslie, Toronto, £1; 2 Judge Campbell, Niagara, 10s.

*Bouquet of Cut Flowers.*

1 J Harris, London, 10s; 2 H Girouard, Hamilton 7s 6d.

*Bouquet for Table.*

1 H Girouard, Hamilton, 10s; 2 R Bugler, London, 7s 6d.

*Collection of Green-House Plants, not less than twelve specimens.*

1 J Pegler, London, £1; 2 G Tyas, London, 15s.

*Best and greatest variety of Green-House Plants.*

1 J Pegler, London, £1; 2 G Tyas, London, 10s.

*Collection of Annuals in bloom.*

R Bugler, London, 10s.

*Six Coxcombs.*

1 Judge Campbell, Niagara, 10s; 2 R Bugler, London, 7s 6d; 3 L M Clench, London, 5s.

*Collection of Verbenas, not less than 12 varieties.*

1 G Leslie, Toronto, 15s; 2 H Girouard, Hamilton, 10s; 3 John Pegler, London, 5s.

EXTRA PRIZES—HORTICULTURAL.

T J Humphries, Toronto, Italian melon, 10s; do do, mushroom, 10s; do do, marrowfat bean, 10s. T Weldon, Westminster, parsnips, 10s. R Bugler, London, white Egg Plants, 10s. G Hatton, London, cucumber, 10s. G Holmes, London, autumn colchicum, 10s; G W Harper, London, currants, 10s, H Girouard, Hamilton, collection of roses, 15s; G Leslie, Toronto, varieties of phlox, 15s; Alexander Shaw, Okra, 10s; Hon J Small, London, sweet corn, 7s 6d. W Thompson, York Township, Scotch Leeks, 7s 6d.

The Judges highly commend a beautiful and extensive collection of Field and Garden Seeds, tastefully arranged in bottles, packed in a case and described on labels, exhibited by James Fleming, Seedsman, Toronto. Also a collection of excellent Colored Drawings of Roots and Plants, shown by the same.—Diploma.

We would beg leave to state with regard to the Floral department, that although the specimens were not so numerous as we would wish to have seen, still some of the specimens shown were very creditable, especially some of the Bouquets of Cut

Flowers, Coxcombs and Verbenas. An extension of the same taste would be very desirable.

[Signed]

FRANCIS EVANS.  
WM. MUNDIE.  
GEO. MURTON.

CLASS N.—DAIRY PRODUCTS, SUGAR, &c.

88 ENTRIES.

JUDGES—Messrs Lamphier, Moule, Harris, & Withers.

*Firkin of Butter, not less than 56 pounds.*

1 Chris Coombes, London, £2 10s; 2 Walter Nixon, London, £1 10s; 3 John Matthews, N Oxford, £1.

*Cheese, not less than 30 pounds.*

1 Hiram Rannie, Dereham, £2 10s; 2 do do, £1 10s; 3 do do, £1.

*Two Stilton Cheeses, not less than 14 lbs each.*

1 Ralph Wade, Jr., Cobourg, £2 10s; 2 Hiram Rannie, Dereham, £1 10s; 3 Ralph Wade, Jr., Cobourg, £1.

*Butter, not less than 20 lbs in Firkins, Cocks or Tubs.*

1 Joseph Coulson, London, £1 10s; 2 Walter Nixon, London, £1; 3 John Stephens, Westminster, 10s.

*Thirty lbs Maple Sugar.*

1 J Bobier, Dunwich, £1; 1 H Kennedy, Township London, 10s; 2 Dean Tiffany, Delaware, 5s.

*Six kinds of Preserves.*

1 James Harvey, Barton, 15s; 2 do do, 10s; 3 Miss O'Reilly, Hamilton, 5s.

*Barrel of Flour.*

1 Samuel Platt, Blenheim, £1 10s; 2 do do, £1.

D. Selleck, of Prescott, had some Patent Air-chest Churns on the ground, but as they arrived too late to be entered, no premium was awarded. Mr. Selleck's Churn, however, was pronounced by competent judges as an excellent invention and well deserving the patronage of the public.

CLASS O.—AGRICULTURAL IMPLEMENTS.

122 ENTRIES.

JUDGES—P. C. Vanbrocklin, James Scarff, W. Smith, O F. Monford, Robert Waddell. Mr. Russell, of Fifeshire, Scotland, Henry Cowing.

*Best Wooden Plough.*

1 Samuel Morse, Milton, £2 10s; 2 Haun and Doby, Humberstone, £1 10s; 3 Alfred Buck, Trafalgar, £1.

*Best Iron Plough.*

1 Barr & Co., Norwich, £2 10s; 2 J. McSherry, St. David's, £1 10s; 3 W. Walker, Westminster, £1.

*Best Pair of Harrows.*

1 T J Fraser, & Co., Woodstock, £1 10s; 2 John Bruce, Glenmorris, £1; 3 Daniel Wilcox, Saltfleet, 10s.

*Fanning Mill.*

1 James Mitchell, Paris, £1 10s; 2 Malcolm McTaggart, Clinton, £1; 3 L M Crosby, London, 10s.

*Horse-power Thrasher and Separator.*

Haggart and Brother, Brampton, £5.

*Grain Drill.*

1 Gilbert Samson, St Catherine's £3; 2 Adkins and Ellsworth, Hamilton, £2; 3 A Anderson, Markham, £1.



*Seed Drill or Barrow.*

E Rockey, Yarmouth, £1.

*Straw Cutter.*

1 H P Brown, Woodstock, £1; 2 Adkins and Ellsworth, Hamilton, 15s; 3 L M Crosby, London, 10s.

*Smut Machine.*

A Jeffrey, Cobourg, £1 10s.

*Machine for cutting Roots for Stock.*

1 Adkins and Ellsworth, Hamilton, £1 10s; 2 do. £1; 3 E Rockey, Yarmouth, 10s;

*Two-horse Waggon.*

1 J Kay, Galt, £3; 2 do. do. £2.

*Horse Rake.*

1 E Rockey, Yarmouth, £1; 2 John Harris, Brantford, 15s.

*Wooden Roller.*

E Rockey, Yarmouth, £2 10s.

*Reaping Machine.*

Adkins and Ellsworth, Hamilton, £5.

*Mowing Machine.*

1 Adkins and Ellsworth, Hamilton, £5; 2 do do £3; 3 W B Harding, Nissouri, £2.

*Potato Digger.*

James Beattie, Westminster, 15s.

*Cultivator.*

1 John Bruce, Glenmorris, £3; 2 R Forbes, Waterloo, £2; 3 Gilbert Samson, St Catharines, £1.

*Machine for making Drain Tiles.*

1 Adkins and Ellsworth, Hamilton, (Charnock's Patent), £2 10s; 2 John B Elson, London, £1 10s.

*Brick-making Machine.*

John Parsons, Toronto, £2 10s.

*Half-dozen Hay Rakes.*

Tate and Brothers, Oxford, 10s.

*Ox Yoke and Bows.*

1 T Phannell, Yarmouth, 15s; 2 Elisha Hall, Ingersoll, 10s.

## DISCRETIONARY PRIZES IN AGRICULTURAL IMPLEMENTS.

William Walker, Westminster, Levelling box or scraper, 15s; Adkins and Ellsworth, Hamilton, Timothy Seed Sower, 10s; T J Fraser and Co, Woodstock, drill plough, £1; John Wade, Port Hope, post hole borer, £3 10s; and diploma; W Nixon, Grimsby, potato and corn planter with seed sower attached, 15s; Elliott and Burgess, London, corn and potato iron plough, 15s; E Rockey, Yarmouth, hand stubble rake, 10s; F House, Thamesford, hayrack, 15s; L Hall, Ancaster, cider mill and cheese press, 15s; P Murdock, Ancaster, combination waggon, £1.

A new mode of Straight Fencing, without the necessity of post-holes, made of either split or sawed rails;—a specimen was exhibited by Mr. Kingstone, of Warwick, and attracted much attention. It is a cheap, strong and sightly fence.—Diploma.

Your Committee to whom was referred this Class in the Provincial Exhibition, beg leave to report,—first, that they would recommend a separation of articles of different kinds, as it gave your Committee much trouble on account of articles of the same kind being spread all over the field. If each were placed in one locality the competition would be more perfect and would obviate that difficulty.

They would report, that on fixing upon the prizes that should be awarded on different articles, they have met with much difficulty on account of the closeness of the competition and the great merit attached to each article.

Your Committee would recommend that two Classes of prizes be given in the articles of Cultivators, distinguishing between the Field, and Drill Cultivators used in potatoes, corn, &c., &c.

We have awarded diplomas as distinctions, and would beg to report that many models, worthy of consideration, as far as ingenuity is concerned, were exhibited, to which we have not given diplomas, not thinking it probable that, on account of complicity, they would ever come into general use. All of which is most respectfully submitted.

[Signed] P. C. VAN BROCKLIN.

Chairman.

## CLASS P.—DOMESTIC MANUFACTURES.

## LEATHER AND FURS, 111 ENTRIES.

JUDGES:—Messrs R Dodgson, J Aylsworth, and Phillip D Booth.

*Saddle and Bridle.*

Henry Wells, London, £1.

*Three Hogsheads.*

Houghton and Wallace, Brantford, £1.

*Set of Farm Harness.*

1 W Gibson, Toronto, £1 10s; 2 W Porter, Bowmanville, £1.

*Set of Pleasure Harness.*

1 John Douglass, Woodstock £1 10; 2 James Nosworthy, Belleville £1.

*Travelling Trunk.*

J M'Vun, Galt £1 10s.

*Side of Sole Leather.*

1 P McKay, Dundas 15s; 2 Houghton and Wallace, Brantford 10s; 3 Wilkinson and Graham London 5s.

*Side of Upper Leather.*

1 Houghton and Wallace, Brantford 15s; 2 R Forbes, Waterloo 10s; 3 P McKay, Dundas 5s.

*Skirting Leather.*

Houghton and Wallace, Brantford 15s.

*Side of Harness Leather.*

1 Houghton and Wallace, Brantford 15s; 2 Wilkinson and Graham, London 10s; 3 P McKay, Dundas 5s.

*Calf Skin Dressed.*

1 Houghton and Wallace, Brantford 15s; 2 R Forbes, Waterloo 10s; 3 P McKay, Dundas 5s.

*Skin of Leather for Carriage Covers.*

1 Clement and Moore, Hamilton £1; 2 Houghton and Wallace, Brantford 10s.

*Fur Hat.*

Raymond and Roland, London 15s.

*Fur Cap.*

1 P Dubuque, London 15s; 2 Raymond and Roland, London 10s.

*Fur Sleigh Robe.*

1 Raymond and Co. London 15s; 2 P Dubuque, London 10s.

*Speciman Bootmaker's Work.*

1 Edward Murphy, London, 10s; 2 W Harding, London, 10s.

DISCRETIONARY PRIZES IN DOMESTIC MANUFACTURES.

- 1 Clement and Moore, Hamilton, belt leather 15s;  
2 Wilkinson and Graham, London, 3 doz roans 10s;  
3 do do, 1 doz hemlock linings 10s.

The Judges of Leather report that the display of Calf-skins was superior to any other kind of leather offered. They recommend prizes to be offered for Dressed Kips and Cordovan, the samples of which exhibited, were excellent. They also recommend Belt leather to be placed in the Prize List, as there is a large amount imported, inferior to that exhibited.

CLASS Q.—MANUFACTURES IN METALS, &c.

79 ENTRIES.

JUDGES.—P C. Vanbrocklin, James Crombie, James Lafferty, E. W. Thomson.

*Best Portable Steam Engine (open to all competitors.)*

- 1 W Levi, Hamilton, Diploma and £5.

*Best Model in Metal of Engine, general Millwright's work or Machinery.*

- J Skinner, Hamilton, diploma and £2.

*Best Specimen of Silversmith's Work.*

- W Dewey, London, diploma and £2.

*Best Parlour Stove.*

- 1 Jackson and Coddington, London, £1; 2 Elliott and Burgess, London, 10s.

*Best Cooking Stove with Furniture.*

- 1 Elliott and Burgess, London, £1 10s; 2 Jackson and Coddington, London, £1; 3 do do 10s.

The Judges also recommended a first prize to J. Parsons, Toronto, his stove being upon a new principle, cooking by gas, and economical.—£1 10s.

*Best Model Hot Air Apparatus.*

- 1 F Tiffany, Toronto, £1 10s; 2 do do 15s

*Best Set of Coopers' Tools.*

- H H Date, Galt, 15s

*Best Weaver's Reeds.*

- 1 John Flynn, London, 10s; 2 Lewis Elliot, London, 5s.

*Best specimen 20lbs Cut Nails.*

- R Juson & Co., Hamilton, 10s

*Best Blacksmith's Bellows.*

- 1 J Dallyn & Son, Hamilton, £1 5s; 2 do do 15s

*Best Rifle.*

- 1 W H Soper, London, 15s; 2 Philo Soper, London, 10s

*Best Half-dozen Narrow Axes.*

- H H Date, Galt, 15s

*Best Set of Horse Shoes.*

- 1 J Johnston, Waterloo, 15s; 2 James Hobbs, Toronto, 10s; 3 W Dunbar, London, 5s

*Best assortment of Edge Tools.*

- Henry Date, Galt, Diploma, and £5.

*Discretionary Prizes in Manufactures in Metal &c.*

- A B Orr, Stratford, fire grate for wood, 15s; P T Ware & Co, Hamilton, gold watch £1; P T Ware & Co, London, Electro-plate £1 10s; H H Date; Galt, broad axes, 10s; do do grubbing hoe 5s; do do railway pick-axe 5s; do do ship carpenters' tools 10s; do do post axes 5s; do do Tinman's axes 10s; do do Tinman's shears 5s; do do last-makers' knife 5s; do do bookbinders' shears 10s; do do butchers cleavers 10s; R Juson & Co, Ha-

milton, railway spikes and rivetts 10s; J & D McCleary, London, plain, stamped and japanned tin-ware £1; James Hobbs, Toronto, two-billed pick 5s; H H Date, Galt, set of millwright's chisels 10s; do do framers' chisels 10s; do do millers' picks 5s; do do stonecutters' tools 10s; do do corner chisel 5s; do do framers' hicks 5s; do do hand axes and hatchets 5s; do do firmers' tools 10s; D Forbes, Waterloo, kip skins 10s; J Johnson, Waterloo, set bar shoes 5s; James Scott, London, two hammers 10s; John Gurd, London, rifle 10s; do do pistol 10s; C Garth & Co, London, gas lamps £1; D. Porter, Hamilton, sewing machine £1; H H Date, Galt, hand hammers 5s; Hiram Piper and Brother, Toronto, railway lamps £1 10s

CLASS R.—CABINET WARE, CARRIAGES, &c

67 ENTRIES.

JUDGES.—William Scarf, Hamilton O'Reilly, E W Thomson

*Best specimen of Graining Wood.*

- 1 W Edwards, Woodstock, diploma and £1 10s;  
2 do do do £1; 3 do do 10s;

*Centre Table.*

- 1 R Robertson, Woodstock, diploma and £1 10s;  
2 do do do 15s

*Best Dining Table.*

- 1 G W Webb, Colborne, diploma and £1; 2 Henry Coombes 15s

*Best Sofa.*

- Rawlings and Lowe, Woodstock, Diploma and £3

*Best Ottoman.*

- Mrs O McCleary, London £1

*Best one horse Pleasure Carriage.*

- 1 W and J McBride, London, diploma and £2; 2 R McCullough, London, £1 10; 3 Reid and McCullough, St Thomas 15s

*Best 2 horse Pleasure Carriage.*

- 1 Williams & Cooper, Hamilton, Diploma and £2;  
2 R McCullough, London, £1 10s; 3 Lowrie & Campbell, London, £1

*Best Wooden Pail.*

- J Young, Galt, 7s

*Best Washing Machine.*

- Richard Lossing, Brantford, 10s

*Best Churn.*

- 1 Henry Markle, East Flamboro, 15s; 2 John Amsbary, Whitby 10s;

*Best Bundle of Shingles, split.*

- 1 C Pound, Malahide, 10s; 2 do do 5s

DISCRETIONARY PRIZES IN CABINET WARE, CARRIAGES, &c., &c.

H Kordes, London, Stoddart Piano; Chickering, do; Dunham, do, and Piano Mecanique, imported, of excellent description, £1 10s; W & J McBride, London, one-horse Sleigh, £2 10s and Diploma; E R Ellis, London, Chiffonier, £1 5s; R Roberts, Woodstock, Drawing-room Chairs and two Stands, 15s; Murgatroyd & Sons, Smithville, a two-horse Pleasure Carriage, £2 and diploma; do do one Trotting Buggy, £2 and diploma; James Tomlinson, Markham, one horse Sleigh, £1; W Matthews, Hamilton, Piano £2 10s; J W White, Melodeon £1 10s.



## CLASS S.—POTTERY.

7 ENTRIES.

JUDGES—F P Gould, Judge Campbell, and Mr. Fleming.

*Best Specimen of Pottery.*

John B Elson, London, £1

*Best specimen Draining Tile.*

1 John B Elson, London, £2 10s; 2 Joshua Sisley, Scarborough £1 5s; 3 do do, 10s.

*Best dozen Bricks,*

Joshua Sisley, Scarborough, 10s.

## CLASS T.—WOOLLEN AND FLAX GOODS.

JUDGES—Messrs. Kerby, Brinle, and Parnell.

*Best piece of not less than 12 yards of Woollen Carpet*

1 George Wright, Flamboro', £2; 2 J W Vanwarmer, Gore of London, £1; 3 Eber Deacon, Woodhouse, 10s.

*Best pair Woollen Blankets.*

1 John Patterson, Dundas, £2; 2 do do, £1; 3 Jacob McMichael, Townsend, 10s.

*Best Counterpane.*

1 J Sfeffell, Humberstone, £1; 2 do do, 15s; 3 Miss M C Thompson, London, 10s.

*Best piece 12 yards Flannel.*

1 Alvy German, Dumfries, £1; 2 do do, 15s; 3 John Patterson, Dundas, 10s.

*Best piece of Satinet 12 yards.*

1 Alvy German, Dumfries, £1; 2 R R Smiley, Ancaster, 15s.

*Best piece Broadcloth, from Canadian wool.*

Alvy German, Dumfries, £2.

*Best piece Flannel, 10 yards, not Factory made.*

1 John Rose, Dumfries, 15s; 2 do do, 10; 3 Chris Waugh, London, 5s.

*Best piece Winter Tweed, 12 yards.*

R R Smiley, Ancaster, £1.

*Best piece Fulleed Cloth, 10 yards, not Factory made.*

1 John Rose, Dumfries, £1 10s; 2 C Tuckey, London, £1; 3 do do, 10s.

*Best Shawls, not Factory made.*

1 Miss M C Thompson, London, £1 10s; 2 Mrs Thompson, York Township, £1; 3 Duncan McVicar, Chatham, 10s.

## DISCRETIONARY PRIZES IN WOOLLEN AND FLAX GOODS.

James Brown, S Yarmouth, 2 fleeces Saxon wool, very fine, £1 10s; D McVicar, Chatham, one plaid, 10s; John Flynn, London, Linen and Cotton Goods, 10s; R R Smiley, Ancaster, knitted drawers, 15s; do do do, knitted shirts, 15s; John Rose, Dumfries, woollen yarn, 10s.

## CLASS U.—LADIES' DEPARTMENT.

353 ENTRIES.

JUDGES—Mesdames Harris, Wilson, Small, Adams, and Beecher.

*Best specimen of Crotchet Work.*

1 Miss Goodhue, London, £1; 2 Miss M Wilson, Westminster, 15s; 3 Mrs Adams, London, 10s.

## DISCRETIONARY PRIZES.

1 Mrs G Taylor, London, 10s; 2 Mrs Adams, London, 10s.

*Best specimen Fancy Netting.*

1 Sarah Sweetman, Hamilton, 15s; 2 Miss Birrell, Pickering, 10s.

*Best specimen Fancy Knitting.*

1 Mrs Burgess, London, 15s; 2 Mrs S Pollard, Hamilton, 10s; 3 Mrs Unwin, Toronto, 7s 6d.

## DISCRETIONARY PRIZE.

Miss Egan, London, 5s.

*Best Embroidery, in Muslin.*

1 Mrs McCoobry, London, 15s; 2 Miss Margaret Mitchell, 10s; 3 Mrs McCoobry, London, 7s 6d.

*Best Embroidery, in Silk.*

1 Miss E Stevens, London, 15s; 2 Miss J R Christie, Niagara, 10s; 3 Mrs J Stevens, London, 7s 6d.

## DISCRETIONARY PRIZE.

Mrs J Stevens, London, 5s.

*Best Embroidery, in Worsted.*

1 Miss Tisdale, Adelaide, 15s; 2 Miss Bellairs, Port Burwell, 10s; 3 Mrs W Gray, London, 7s 6d.

*Best specimen of Worsted Work.*

1 Mrs L Lawrason, London, 15s; 2 Miss M Timmis Westminster, 10s; 3 Mrs R Fairclough, Hamilton, 7s 6d.

*Best specimen of Raised Worsted Work.*

1 Miss A Langs, Windham, 15s; 2 Mrs Unwin, Toronto, 10s; 3 Miss Tupper, Brantford, 7s 6d.

*Best specimen of Ornamental Needle Work.*

1 Miss H Ezekiel, London, 15s; 2 Miss Tisdale, Adelaide, 10s; 3 Mrs Dixon, London, 5s.

*Best specimen of Quilts, in Crotchet.*

1 Miss C Graham, Woodstock, £1; 2 Miss Simpson, Toronto, 15s; 3 Miss M McKenzie, Montreal, 10s.

*Specimen in Knitting.*

1 Mrs Geo. Walker, London £1; 2 Mrs Wm. Gibson, London 15s; 3 Mrs Geo. Jackson, London 10s.

*Specimen in Silk.*

1 Mrs P Jones, Brantford £1; 2 Mrs J P Vercoe, Yarmouth 15s.

*Piece-Work Quilt.*

Miss Fowler, Fingal £1; 2 Mrs Buchanan, Port Sarnia 15s; 3 Sarah Bigelow, Hamilton 10s.

*Specimen in Tatting.*

Mrs. and Miss Gill, London, 15s.

*Specimen of Braiding.*

1 Mrs. A R Christie, Niagara, 15s; 2 Miss Pantan, Hamilton, 10s; 3 Mrs Hatton, London, 7s 6d.

*Specimen of Wax Fruit.*

1 Miss Ezekiel, London, 15s; 2 Miss Bell, Toronto, 10s; 3 Miss M C Clarke, East Oxford, 5s.

*Specimen of Wax Flowers.*

1 Mary Beattie, London, 15s; 2 Mrs Dan Campbell Dundas, 10; 3 Mrs F Ross, Toronto 5s.

*Pair of Woollen Socks.*

1 Mrs Alexander Kerr, Westminster, 10s; 2 Miss Barker, London, 7s 6d; 3 Mrs John Reese, Chatham 5s.

*Pair Woollen Stockings.*

1 Mrs E D Moore, Toronto 10s; 2 Mrs Dunbar, Westminster, 7s 6d.

*Specimen of Gentlemen's shirts.*

1 Miss M Niles, Dorchester, 15s; 2 Miss Susan Mitchell, London, 10s.

*Pair of Woollen Mittens.*

1 Mrs Jacob McMichael, Townsend, 10s; 2 W H Ball Thorold, 7s 6d.

*Pair of Woollen Gloves.*

1 Mrs Dunbar, Westminster, 10s; 2 Mrs Dunbar, Westminster, 7s 6d; 3 Mrs Thompson, Toronto, 5s.

*Hat of Canadian Straw.*

1 Mrs J Moorehouse, Dorchester, 10s; 2 Mrs Thompson Toronto, 7s 6d; 3 Mrs Thompson, Toronto, 5s.

DISCRETIONARY PRIZES IN LADIES' DEPARTMENT.

Mrs Unwin, Toronto 10s; Mrs T Taylor, London Tissue Flowers 15s; Miss F Ezekiel, London, Fancy Head-dress, 10s; Miss Eliza Bates, Westminster Fancy Basket, and Stand, 10s; Miss Bell, Westminster, Fancy Fan; J K Brown, London, Fancy Bonnet, 15s; Mrs Hodge, St Thomas, quilt, 10s; Mrs Hodge, St Thomas lace collar, made by a blind girl, 10s; Mrs M Watson London, 7s 6d; Miss Egan, London, Card Racks, 10s; Miss S Pollard, Hamilton, 10s; do do do 15s; do do do 15s;—Charlesworth, Toronto, Fancy Head-dress 10s.

CLASS V—FINE ARTS &c.

JUDGES:—Col Wilson, Mr. Humphreys, Judge Campbell, Mr Birrell, G A Barber.

OIL.—PROFESSIONAL LIST.

*Historical painting, Canadian subject.*

Paul Kane, Toronto Diploma and £3.

*Landscape, Canadian subject.*

1 Paul Kane, Toronto, Diploma and £3; 2 do do £2 10s.

*Animals, grouped or single.*

Paul Kane, Toronto, Diploma and £3.

*Portrait.*

1 Paul Kane, Toronto diploma and £2 10s; 2 Adam Walthen, £1 10s.

DISCRETIONARY.

James P Wilkins £1 10.

*In Water Colours.—Landscape, Canadian subject.*

J B Wandesford, Goderich, diploma and £2 10s.

A number of excellent views of Canadian Cities, were shown in this class by Mr. E Whitefield, but being colored lithograph prints, they do not come within the meaning of the prize list.

*Portrait.*

1 J B Wandesford, Goderich diploma and £2; 2 J B Wandesford, Goderich, £1.

*Animals, grouped or single.*

Mrs Taylor, London, diploma and £2 10s.

*Flowers.*

1 J B Wandesford, Goderich. diploma and £1 10s; 2 E Whitefield, Toronto, £1.

*Pencil and Crayon.—Pencil Drawing.*

E Whitefield, Toronto, diploma and £1 10s; 2 Robert Davis, London, £1.

OIL.—AMATEUR LIST.

*Landscape, Canadian subject.*

Cyrenius Hall, Westminster, diploma and £2 10s.

*Portrait.*

John Ashton, London, diploma and £2.

*Animals.*

1 F W Wright, Toronto, £2 10s; 2 Cyrenius Hall, Westminster, £1.

*In Water Colors.—Landscape, Canadian subject.*

1 Miss Eccles, Toronto, diploma and £2; J F J Harris, London, £1; Highly commended, Mrs H Dixon London, and second piece by J F J Harris, London.

*Animals, grouped or single.*

1 F W Wright, Toronto, diploma and £2; 2 do do £1.

*Miniature.*

1 Miss Tisdale, Adelaide, diploma and £1 10s; 2 Mrs P Jones, Brantford, £1.

Highly commended, Miss Tisdale, Adelaide.

*Flowers.*

1 Miss F. Ross, Toronto, diploma and £1; 2 Miss Gill, London, 15s.

*Pencil and Crayon.—Pencil Drawing.*

1 Miss Gill, London, diploma and £1; 2 Miss Tisdale, Adelaide, 15s; 3 Mrs F W Wright, Toronto, highly commended.

*Crayon Drawing.*

1 Miss A Blake, Toronto, diploma and £1; 2 Miss Sedworth, Woodstock, 15s.

*Colored Crayon.*

1 F W Wright, Toronto, diploma and £1; 2 Miss Maughan, Toronto, 15s.

*Best specimen of Colored Geometrical Drawing of Engine or Millwright work.*

1 D Hanvey, St Thomas, diploma and £2; 2 Miss Stevens, London, £1.

*Daguerreotype, best collection. the Exhibitor to have operated in Canada for the last 12 months.*

1 Graves & Prudden, London, diploma and £1 10s; 2 James Egan, London, £1.

DISCRETIONARY PRIZE.

Canadian Immigration Society, diploma and £1.

*Lithographic Drawing.*

I tefeld, Toronto, diploma and £1 10s; 2 Maclear & Co, Toronto, £1; 3 Thomas Wheeler, Toronto, commended.

*Wood Engraving.*

Thomas Wheeler, Toronto, (beautiful specimen) diploma and £1 10s.

*Engraving on Copper.*

Thomas Wheeler, Toronto, (good specimen) diploma and £1 10s.

*Engraving on Steel.*

T Wheeler, Toronto, (very good) diploma and £1 10s.

*Best specimen of Seal Engraving.*

Thomas Wheeler, Toronto, diploma and £2.

*Carving in Stone.*

1 John Smith, Port Stanley, £2; 2 A McClure, London, £1.

DISCRETIONARY PRIZE.

H H & M Hurd, Hamilton, £1.

*Ornamental Writing.*

James Riley, Westminster, diploma and £1 10s.

*Stuffed Birds.*

Rev B Cronyn, London, £1.

*Picture-Frame, gilt.*

Smith & Roberts, Hamilton, £1.

*Stained Glass.*

Noble & Lewis, London, £1.



*Dentistry.*

1 Miles B Stennett, Hamilton, diploma and £1; 2 D O French, Toronto, 10s.

## DISCRETIONARY PRIZES IN FINE ARTS, &amp;c.

Walter Eales, Toronto, fire-works, recommended, £1; F W Wright, Toronto, sea piece, 10s; do do, anatomical drawings, 15s and diploma; Miss Gill, London, etchings, 7s 6d; do do, Flowers, 5s; P-ters & Smith, London, architectural drawings, £1 10s and diploma; Noble & Lewis London, painting on glass, 10s; Miss Tisdale, Adelaide, water color paintings, £1 10s and diploma; John Ashton, London, oil landscape, 10s; Miss Maughan, Toronto, pencil drawings, 10s; Mrs Taylor, etchings, £1, highly commended; Dr A T Bull, London, surgical splints, £1 10s.

The Judges regret that, in all probability, articles possessing merit may have been overlooked, as in some classes they have not been able to find out all the articles entered.

## CLASS W.—INDIAN PRIZES.

JUDGES.—Colonel Wilson, Mr J T Humphreys, Judge Campbell, Mr. Birrell, George A Barber.

*Best Tobacco Pouch worked with Porcupine Quills.*

Mr Jones Brantford, 5s

*Best pair of Moccasins (worked with Porcupine Quills)*

1 C D Paul, St Thomas, 7s 6d; 2 do do do 5s.

*Best pair of Moccasins (worked with Beads.)*

C D Paul, St Thomas 7s 6d

*Best Fruit Basket.*

Mrs J L. Williams, London, 7s 6d

*Best Hand Basket.*

1 Mr Jones, Brantford, 7s 6d; 2 C D Paul, St. Thomas, 5s

## DISCRETIONARY PRIZES IN INDIAN DEPARTMENT.

C D Paul, St Thomas, Tobacco Pouch with beads, 5s; do do leggings, 5s; do do buckskin mittens, 5s; do do Indian box, 5s; do do Moosskin, 5s; Mr Jones Brantford, bowl and ladle, 10s; do do do 5s

## CLASS X.—BOOK-BINDING, PAPER, &amp;c.

JUDGES.—Dr Baker, T C Dixon, and Col Marks.

*Best Specimen Bookbinding.*

1 Thompson & Co, Toronto, £1; 2 W Warwick, Woodstock, 15s; 3 John G Campbell, London, 10s

*Best specimen Letter-press Printing, executed since last Exhibition.*

1 Thompson & Co, Toronto £2 10s; 2 Talbot and Siddons, London, £1 10; 3 do do £1.

The Committee appointed to examine and Judge Class X., report that the Bookbinding No. 3, 2 and 4, are very creditable specimens, and have received 1st, 2nd, and 3rd prizes accordingly. Letter Press Printing No. 3, is exceedingly well executed, and has received the 1st Prize; Nos. 1 and 2, to which the 2nd and 3rd prizes are awarded, are also excellent specimens of Canadian work.

## CLASS Y.—FOREIGN STOCK.

*Devon Yearling Bull.*

L F Allen, Buffalo, N.Y. £2

*Devon Heifer.*

Do do £1

## CLASS Z.—FOREIGN IMPLEMENTS.

*Best Subsoil Plough.*

H C White, Buffalo, £1

*Cider Mill.*

H C White, Buffalo, £1

*Churns.*

H C White, Buffalo, £1

*Cider Mill and Press.*

J R Coe, Kirtland, Ohio. £1 10s.

## PREMIUMS FOR COUNTY REPORTS.

D. B. Stevenson, M.P.P., Picton, a premium of £20, for the best Agricultural Report on the County of Prince Edward.

Wm. McMicking, Queenston, £20, for the best Agricultural Report on the County of Welland.

E. Billings, Bytown, £15, for the best Agricultural Report on the County of Carleton.

## TOWNSHIP OF YORK FARMERS' CLUB.

## CULTURE OF FLAX AND HEMP.

*Paper read by Mr. John Dew.*

MR. PRESIDENT, SIR,—The subject for discussion this evening, and which I have been appointed to introduce, is one which I consider every way worthy the attention of the Canadian farmer, viz., the best method of cultivating "Flax and Hemp," but sir, I have small hopes that our discussing the subject will have any effect in drawing the attention of our farmers seriously to it, at least while the "palmy days" remain, wherein the farmer can realize the present high prices for wheat. In this, however, I hope I may be mistaken; be that as it may, I feel satisfied that a long time will not elapse, before this subject becomes one of the most prominent and important, that must engage the attention of our agriculturists; it has done so in many parts of the old country; it has produced its Flax Societies in England, and its Flax Improvement Societies in Ireland, and, I believe, other countries have their Societies,—having for their object the improvement and extension of this branch of industry. This question has often been mooted in Canada, and the columns of the Canadian *Agriculturist* have often been devoted to the subject, and we were informed therein, some 15 or 16 months ago, that the Minister of Agriculture in this Province, had sent to the United Kingdom, a person who had some previous knowledge of the subject, to make enquiries as to the best modes of growing, preparing and manufacturing of Flax. I have looked with no small degree of interest for the report thereon, but have been hitherto disappointed. It may be a question with some, whether public aid should be given to this branch of industry, or whether it should be left to private enterprise alone. The present grave events now pending in Europe will, perhaps, decide this question. The vast quantities of cordage, canvas, hemp and flax seed, and oil-cake, required in the United Kingdom will, perhaps, make it a matter of policy to encourage the Canadian farmer to grow these staples, by giving

a premium in the shape of high prices. I will not, however, take up the time of the meeting at this time with discussing this question, but will now proceed to the main question, viz., the best method of growing "Flax and Hemp," and, in doing so, I shall not detail the different modes which I have practiced in growing those staples, but detail the one which I prefer, and I prefer it because it has done well with me and because my wheat crop after it was very good. The rotation and management are as follows: 1st year,—it is spring, and I take a piece of sod or meadow land and crop it with oats or peas, if low land (which I prefer), I sow oats, if upland, sow peas; in the Fall I draw on my manure or as much as I have to spare, and spread it; I then plough my land in ridges or rows, about 2 or 3 feet apart and plough deep; this covers up the manure and exposes a large surface for the winter frosts to act upon; and also lay your lands dry, and for this purpose water courses should be opened out where needful. 2nd year,—prepare your land for corn and roots, and if not manured well in the Fall, do it now, and be generous—it will repay you, and the ploughing, hoeing and working these crops will pulverize the soil and get it into fine tilth by the Fall, when all that will be necessary to be done, will be to see to your water courses; and take care that the water all gets off, it will greatly assist your next spring work. 3rd year,—as soon as the land is dry,—and I advise you not to touch it until it is quite friable,—which it will be when dry; then plough, harrow and roll, repeating the harrowing and rolling until you have your land as fine as a garden; then sow your flax seed and lightly brush it in—either by a light harrow, with brushwood interwoven—or a hurdle made with brush on purpose, and finish by running a light roller over the whole. This brings me to the subject of the seed,—and first with regard to the quantity of seed per acre,—this should be regulated by the object the cultivator has in view; when he sows his land, if his object be to obtain as much seed as possible, without regarding either the quality or quantity of the fibre, then three pecks per acre of good clean seed will suffice, and even less will suffice if the land is very rich; but if the object be to obtain as much fibre as possible, then  $1\frac{1}{2}$  or 2 bushels will not be overmuch—always bearing in mind that the finer the fibre the larger will be the produce of it, and in this case the richer the land the more seed is required—the object being to prevent the stooling out, as that would be injurious to a fine staple, but best for the production of seed. Again, in a general way, where the farmer's object is a medium quantity of both seed and fibre, I have found one bushel of seed per acre answer a good purpose. Care should be taken that the seed be good, there is much bad seed, and generally very foul and full of the seeds of other plants, the worst being the wild mustard or charlock, and a spring variety of cockle, called "flax cockle," the seeds of which are hard to separate—being so near the size of the flax seed itself; there is another kind of seed which is not so injurious as the above, it is called yellow seed and the plant yellow weed,—I suppose from its

flowers being of that color,—it is, by some, called "gold of pleasure;" these seeds are nutritious and yield a large quantity of oil, although deficient in that respect to the flax seed; it will, however, if not kept down, soon become the principal crop; care should therefore be taken in cleaning the seed as much as possible, and by careful weeding; and to ensure a good crop of flax this should be effectually done,—every weed should be cut up, pulled out, completely eradicated, no half work should be allowed here, and the best way is to get at it early while the flax is only a few inches high; there is then less danger of injuring the flax, which is, when trodden down, rather liable to damage. The weeding should, if possible, be done by women, going on their knees and facing the wind, which will greatly assist its powers of acquiring its erect position, (if it is met by the wind in the direction the flax is laid)—and sir, the flax at this period, no doubt would be benefited, if it had a little of Mr. Mechi's liquid manure showered over it, with his forcing pump, hydrants and "gutta percha" tubing; but as we must wait some years for that, we must leave it to Providential showers and morning dews, until it has obtained sufficient maturity for pulling—which may be known by observing the time when the leaves and foliage fall from the stalks, and when the bolls are had enough to resist considerable pressure, when placed between the finger and thumb,—the seed beginning to glaze and of a pale brown color. The pulling should then be done and this should be carefully performed,—the ends being kept as level and even as possible; this is done best by grasping firmly a considerable quantity in the hand at once, and when drawn, if any earth adheres, a smart swing or gentle rap against the foot will knock it off. It should be made into sheaves about 15 inches in circumference and tied with some of the flax, but some prefer to tie it with rushes, old matting, or straw, anything to prevent loss in the fibre, as it is found that if bound with flax the band does not water or clean out so well. The sheaves, when tied, should be placed in stooks running north and south, about 10 or 12 sheaves in a stook, and should remain in stook until perfectly dry, it may then be taken to the barn or stacked in the same manner as any of the cereals, to be threshed at your earliest convenience. Your land may now be ploughed into suitable stitches and Fall wheat sown,—with seeds the following spring, or if the land throws heavy to straw, the same rotation may be repeated. I now, sir, come to the subject of threshing, which is best performed with a block of hard wood, about a foot long, 4 to 8 inches wide and 3 or 4 inches thick, with a handle driven into it at an angle of about 40 degrees, the edges taken off a little and the ends rounded; this will answer the purpose well. Some thresh with a flail, made with a thicker and heavier piece of wood than the common swingle; the flax should be laid evenly on the floor, and when threshed clean, carefully tied up into small bundles of about the same size as when pulled, and rather loosely,—that is, if it is intended for water rotting; if not, it may be tied up in any way you please, so long as it is kept straight. Another



method is sometimes practised of separating the seed, called rippling; it is done by drawing the flax through upright pieces of iron or steel made taper and quite pointed, and fixed firmly into a thick plank, and placed so as to form a kind of comb, through which the bools cannot pass; the flax is drawn through and the heads fall off and are afterwards beaten and rubbed until the seed is separated. I think, where convenient, a common threshing machine would answer this purpose of threshing the bools very well; the chaff, after the seed is separated, should be taken care of; it is, when properly prepared, said to be better feed than thin oats; it makes excellent food for milch cows, when scalded, with a little bran and cut hay, or chaff. The threshing being done, the straw can be stacked away for future use, and if kept dry, it is said to improve by being kept over for one or two seasons. There is one word of advice I would suggest, and that is, to take care that your threshing floor be tight, or the seed will find its way through, like fine sand through the hour-glass.—And now, sir, this brings me to the subject of Hemp—in which I have had but very little experience—having grown but little myself and seen very little grown. The only crop I had any opportunity of observing, was grown on upland and contrary to the common opinion, that it must be grown on alluvial soil. It was sown broadcast, and, while young, kept clean by hoeing, and thinned out to about 15 inches apart; the plant soon takes possession of the ground and keeps down everything else.—As soon as the male plants were sufficiently mature, they were pulled, the seed-bearing plants being left until the seed was sufficiently ripe; it was then pulled and laid down for 2 or 3 days, then placed into stooks like corn, and when perfectly dry, was taken to the barn to be threshed; care should be taken, or much seed will be lost by shedding. The male plants may be known by their yellow color, the fading of the flowers and the yellow dust which flies off in great profusion when shaken. The seed sown was about 1½ bushels per acre. With regard to the preparation of the soil, it is essentially the same as for flax; it should be made fine by repeated ploughing and tillage, and if not rich must be made so—and the richer, the more plants it will sustain, consequently more seed should be sown. Mr. Clay, of Kentucky, in an Essay on Hemp, says that the soil should be as carefully prepared as for flax. This too often neglected point cannot be attended to too much. Hemp is not so hardy a plant as flax, it should not be sown so early—as it will not bear frost; the middle of May will be soon enough; the best time is, if possible, just before a shower. The land should be rolled, and if the seed could be drilled, I think it would be an improvement, and with this I must conclude the subject of Hemp. It would be easy to enumerate other methods of cultivation of flax, but in a meeting like this, composed of farmers, each one may be supposed to know something appertaining to its culture, and some, I have no doubt, do know much more of it than myself. Before I conclude, I beg leave to remark that the increased demand for beef and mutton, has a par-

ticular bearing on the rotation I advocate; by it a great amount of food will be obtained. It may be the present prices for butcher's meat will be maintained, and although the Canadian farmer can neither grow turnips nor use them as the British farmer can—our long and cold winters prevent that,—yet they will be useful as an auxiliary. Cattle want something of a warmer and less watery nature, and we can supply that by the Indian corn and the flax seed, or exchange our flax seed for oil-cake, and a combination of these, with roots, will surely be a fattening food, and very largely increase the quality as well as the quantity of the farmer's best "friend," viz., his manure heap. When the farmer's object in growing flax, is solely for the seed, he sometimes practices what is technically called "stealing a crop;" this is often done in the state of Ohio, by sowing flax seed with barley, and, when at maturity, harvesting both together; and a writer in the *Norfolk Messenger*, and copied into the *Agriculturist*, recommends sowing flax seed with oats. But, sir, I do not approve of sowing flax seed with a grain crop, at least in this part of Canada, my greatest objection being the impossibility of using the straw as we now do, it would only be useful for bedding of horses or hogs; but if he wishes to do something in that "pilfering" way, I would advise him to get a piece of rich land, or made so, and sow carrots as early as possible, in rows about 28 inches apart, then sow flax seed broadcast over the whole and lightly roll it; the flax will come off in July and the carrots should be cleaned out and cultivated between the rows, and if the weather is seasonable, he will find his carrots do well and come off the latter end of October. Flax, in Flanders, is generally followed by a crop of white turnips the same year, the ground having a dressing of liquid manure given it.

N.B.—The amount of produce per acre is so connected with the preparation of the fibre, that I beg to leave that part of the question untouched at present. I trust some one, better qualified, will introduce the subject at an early day.

## Communication.

STAMFORD, C. W., Sept. 24, 1854.

To G. BUCKLAND, Esq.

In the present number of the *Canadian Agriculturist* are some extracts from the Rev. Mr. Smith's pamphlet, in which he details his plan of growing each succeeding year a crop of wheat on the same land,—a great improvement on Tull,—who succeeded in raising sixteen bushels on one acre of land, one-fifth part of which only was in crop. Mr. Smith equally divides his half crop, half fallow, from which half his average yield is 34 bushels. Now, sir, I have been thinking if the Canadian farmer, who has allowed the pigeon weed or Canada thistle to eat out his crop, even after a summer fallow, was to adopt the system so successfully carried out at Low

Weedon, and realize sixteen bushels, at the same time giving a death blow to the intruders, would he not profit by the two years' experiment?

There are two other classes, the small farmer and the gardener, who has land not in vegetables; he has the talent necessary to carry through the whole process, tools also, except a small drill and cultivator, to follow, with a certain profit, on his extra labor.

He who cultivates from 10 to 20 acres, could set apart two, four, or six acres, to be drilled in upon one-half, while the other half is in fallow.

Could not a plot of the Experimental Farm be devoted to the purpose of proving its feasibility in Canada West?

As neither note nor comment is appended to the extracts, I will venture a few facts on the subject in hand.

Tull has been justly styled the father of the drill system; his idea was to grow wheat year after year on the same land, without manure, that is, cropping one-fifth, four-fifths being fallow;—average crop, sixteen bushels.

The Frenchman does not realize so much as sixteen bushels, with advantages Tull did not possess.

About the end of the last century, a Rev. gentleman, a few miles from Low Weedon, cultivated a small field on the Tullian principle with six feet lands, three feet in crop, drilled nine inch intervals, and three feet fallow, ploughed three or four times with a small plough and one horse; his best crop reached eighteen bushels.

From then, until Mr. S. published his results, little has been done or written, as the majority of practical men think if half of ten acres are fallow, better crop five and work the other five, and by giving the same labor and manure to the half, in two years the whole ten will have produced more profit, than if drilled and fallowed on the Smithsonian principle. Canadian farmers are obliged to economize labor and time.

The great secret of profitable farming is plenty of manure, to be produced by a full stock of cattle and sheep, provision being made for abundance of food at all seasons.

Yours truly,

JAMES JONES.

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### Editorial, &c.

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G. BUCKLAND, Esq., EDITOR.

H. THOMSON, Esq., ASSISTANT EDITOR.

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### HINTS FOR THE MONTH.

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The work to be done in November will consist to some extent in a continuation of that done for the past month. Fruit and roots, if still outstanding, must now be gathered and secured, the near approach of frost rendering the doing so absolutely necessary. In reference to

securing the latter, the reader will find on page 110 of the present volume of the *Agriculturist*, a communication from Mr. Gordon of Whitby, from which some useful hints may be gained.

Now is a favorable season, when the hurry of the summer's operations is over, for the farmer to look around him, and project improvements in his system of farming for the future. Let him observe where the results of his labours have disappointed his expectations, and endeavour to ascertain the cause, with the view to counter-acting opposing tendencies in the composition of his soil or farm, stock, or other of the main elements with which he has to deal, and also with a view to remedying such defects as he may be convinced of in his mode of husbandry.— This may be partially applied during the remaining open season of the fall, and also during the winter, in several ways, to some of which we may briefly allude.

The season for conducting field operations may reasonably be expected to remain open in Upper Canada, as usual, till about the end of the present month, or even several weeks later, but it may happen on the other hand that hard frost shall set in, as is sometimes the case, as early as the 15th or 20th of the month. However that may be, the season, so long as it is favourable, should be taken advantage of to make as much and as good use of the plough as may be desirable. Deep and clean fall ploughing on stiff lands, by exposing the surface to the action of the frost, has a valuable influence in meliorating the natural stubbornness of the soil. The ploughing should be performed on those fields where it will be of most value to have it done over winter, with a due regard to a judicious rotation of crops. Surface draining also should be duly attended to, by forming sufficiently narrow ridges, and opening the dead furrows and cross drains, very much in the same manner as in putting in winter wheat. If any of the land lies partly or wholly under stagnant water during winter, half the benefit of the ploughing would be lost. After the commencement of hard frost prevents the further use of the plough, something more than surface drainage may still be projected and carried out, by cutting drains with



the spade through low spots, &c. All such operations will be found of value the following season, when seed time comes round again. However, this subject was alluded to in our last.

As a considerable amount of thrashing is necessarily performed during fall and early winter, it will be requisite in a greater degree than usual this season, to pay due regard to the saving and economising of the straw and chaff. Large quantities of these are frequently absolutely wasted for the want of a slight expenditure of time and care. The chaff, which always contains much nutritious matter, should, if possible, be carefully stored in the barn, and the straw, if it cannot be housed, should be at least stacked, and protected by fence or otherwise from being destroyed by the cattle.

About the 15th or 20th of the present month is the proper time to let the Ram and Ewes run together. The lambs will then be dropped about the middle or end of April, when the early grass will assist the ewes in giving a good supply of milk. And in breeding sheep, it is now quite unnecessary to state that attempting to save money by not obtaining the services of a good ram, would be the very worst of economy. The ample encouragement now given in Upper Canada to the spirited breeders of good stock of all kinds, and the high prices they obtain for animals, are highly gratifying, and full of promise of a high progressive improvement, as well as an evidence of the general prosperity of our farmers. The fact also affords the best inducement that can be offered, to those who are still in the rear in the march of improvement, to imitate those who have set so praiseworthy and successful an example. No farmer should be content with any animal to breed from but of the very best quality, or at least the best his means will permit him to purchase.

Penning up hogs for fattening is one of the necessary operations of the present period of the year. From the high value of peas and other feeding materials it will be necessary so to economise and use them as to make them produce the greatest possible result in a given time, otherwise the fattening process may be attended by a loss instead of profit. In order to effect this the

hogs should be put up in thoroughly dry and clean apartments, well ventilated, and moderately warm with well arranged feeding troughs, also kept sweet and clean, and their food and water given with the greatest attention to regularity in time and quantity; of the latter just as much as they can eat at once, without permitting any to be wasted.

As winter is now near at hand, it is of the highest importance that all the arrangements about the barn-yard should be as complete as possible, both with a view to the protection and feeding of the stock, and to the production of the greatest possible amount of manure. There can be no doubt that the growing of grain has received heretofore in this country too great a share of the farmers' attention, to the neglect of the raising and fattening of stock. In the question of immediate profit it may well be doubted whether this has not been a mistake, but looking at the ultimate productiveness of the soil, there can be no doubt in the matter. The manure heap is the farmer's mine of wealth, and cannot be produced in much quantity without the aid of a well filled stock yard. Therefore every aid, by a well contrived range of farm buildings, proper feeding places, &c., towards making use of all the farm fodder to the best possible purpose, and accumulating the greatest amount and best quality of manure, is of the highest value, and should be sought after and adopted with the least possible delay. Waste of manure by washing rains, should be at once prevented by all the means that can be adopted.

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#### CARROTS.

Experiments have been made which prove that a bushel of carrots and a bushel of oats, fed together to a horse, are worth more than two bushels of oats; yet an acre of ground which will yield forty bushels of oats will produce a thousand bushels of carrots.

Why will not Canadian farmers grow more Carrots, more root crops generally, and less oats? By subsoil ploughing and high manuring, upon a loamy soil, a thousand bushels of carrots may be grown to the acre. It has been found a good practice to soak the seed 36 hours in brine and to roll it in plaster. Any light, friable, rich soil will grow carrots.

## Literary and Miscellaneous.

### EDUCATION ANALYSED.

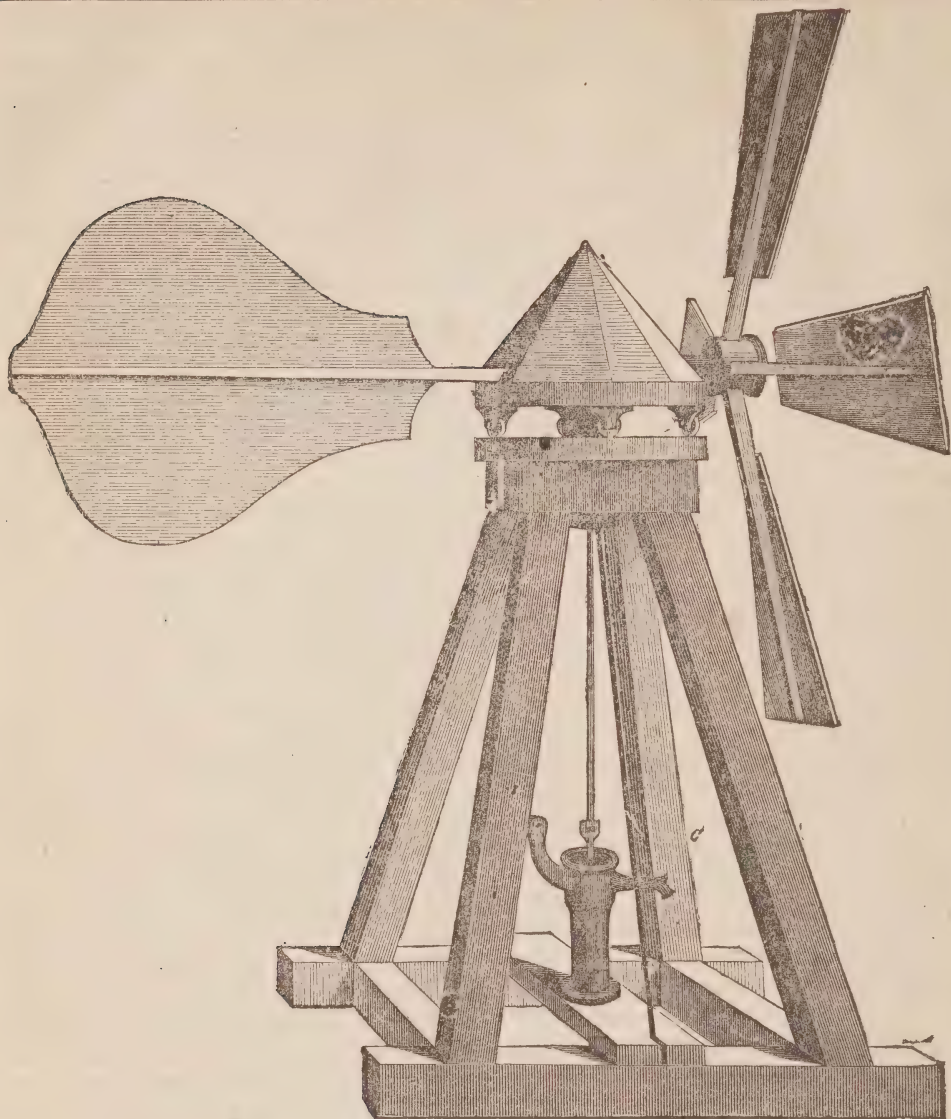
BY MRS. M. F. H. THOMAS.

#### CHAPTER IV.

*Metaphysics.*—Matter even in its most etherealized form is totally inert; possessing no self-moulding, or self-moving power; yet it has *properties*, latent, until brought out by the force of mind, which modify the action of that force; or in other words, cause mind to exhibit certain manifestations when acting through it. These laws or properties, immutable and coexistent with its substance, are in perfect adaptation to the constitution of mind and subservient to its purposes; for there is nothing but adaptation and harmony in the “nature of things.” Upon this inert matter, the Spirit of God “moved,” fashioning a world of light, beauty and intelligent design—a counterpart of itself, all good, for a pure fountain can yield only sweet water. Hence theologians wisely bid us study in nature, the character and perfections of Deity. Did metaphysicians carry the same inductive spirit into the study of the human mind, there would be less clashing and vagueness. God is spirit; and we can study him only in his manifestations through matter, which he animates, so mind, the human mind can be studied only in its action on matter—the organism it animates. It fashions to itself the body which contains it. It makes itself a fitting tenement, and from the external we judge the internal. That the mind moulds the features is demonstrated by daily experience, and confessed tacitly by all. Even the child instinctively reads character in the countenances of those around it; its young mind turning like the magnet, to the loadstone of sympathy and benevolence; and a close observer of mankind, can seldom be deceived in his estimate of those among whom he mingles. Now it is evident that each faculty of the mind, does not use every part of the organism simultaneously, or promiscuously, as is shown by the different expressions and developments, caused by the different states of feeling. Thus habitual sour temper contracts the brow, while care furrows it. We also know that the constant exercise of any part strengthens and develops it; hence parts most constantly used become disproportionably strong and predisposed to action, and re-acting by this condition on the mind, produce a tendency to excessive action in its corresponding faculties. Now each

faculty of the mind has its own proper stimulant in the external world to which it responds, or by which it is excited to action. Thus murder excites destructiveness; hence the blind courage, cruelty and fearful recklessness of life, in time of war; and hence too, the law of “blood for blood.” Arrogance excites self-esteem, kindness, benevolence, &c., &c. Here, then, is the grand lever, by which the world of mind is moved—the secret of its education—the only means of its reformation. That educating power begins to exert itself with the existence of the mental germ, in the influence of the parent mind; and, in turn, the character it imparts, stamps its impress on the new organism. After birth, the influence of the parent mind, is exchanged for that of external circumstances; the exercise of any faculty in those around us, having a tendency to excite the same in us. Sensations, feelings, words and deeds, the action of other minds, stamp our individuality by exercising the same in us. This is the great secret of success in education; the solution of the great problem of government, both parental and civil. A proper realization of this truth would banish gibbets, knouts, guillotines, and every other instrument of torture from our earth, even to the pedagogue’s ferule; would make penitentiaries places of confinement indeed, but confinement amid moral influences and manifestations of benevolence; would still domestic railing and breathe an atmosphere of kindness through our world; I for one, verily believe, *that the chief sins of our race, are those of ignorance.* Have not men, long enough tried to banish crime by force and fear? By corporeal inflictions and exhibitions calculated to appeal to, and stimulate the worst part of our nature? Has not the gibbet long enough goaded the assassin to deeds of blood? Has not the exhibition of brute force in government long enough cultivated the brute in human nature, and the rod and ferule long enough debased our children. Parents, have you a child whose angry temper disturbs and darkens your home? Speak firmly but *gently*. Wear a kindly smile. Sedulously keep it from scenes of cruelty and anger, and the noxious weeds will die out for want of nourishment. Is he addicted to deception and fraud? First of all remove temptation as much as possible, and then be sure that he sees only staunch integrity and openness in those around him. The old adage, that “*like begets like*,” is an eternal truth. Here is a test too, for reformers and reform institutions. *Talk* as we will, words





PORTABLE WIND-MILL.

The above cut represents a very convenient application of wind-power to the operation of a pump. These machines are now used extensively in the United States, and are made of all sizes. They are portable and can be applied to various purposes. The engraving is a view of one capable of driving a two-inch pump, and costs at the manufacturer's, about \$30, including the pump. The frame is 5 feet six inches high, and the diameter of the wings is 10 feet.

In situations not too much sheltered, these windmills can be applied to many purposes.—

By the erection of suitable tanks, water might be raised and retained at such an elevation, as not only to supply a house from a distant spring or stream, but afford the means for extinguishing a fire, watering a garden, &c. Built on a larger scale they may be applied to threshing, sawing wood, &c. A very slight breeze is sufficient to operate a pump.

These mills are very substantially made by Mr. A. E. Beach, New York, and being light can be readily forwarded to any part of the country.

without deeds are but sounding brass. Deeds, must renovate the world. The life—the daily walk is the only really effective sermon. We must purify and elevate ourselves before we can exert an elevating and purifying influence on society. Sacrifices and burnt offering—the awful manifestations of Sinai—the law graven on tables of stone, and the verification of prophecy, could not suffice for the world's redemption. A perfect life—an exhibition of immaculate virtue and human trials and sufferings, alone was sufficient. When will men learn, that only virtue can create virtue. Parents, would you have your homes the abodes of all that enobles and happiness mankind? Be yourselves noble and happy. Be yourselves whatever you would have your children become. What culpable carelessness is shown in the selection of teachers for common schools. Remember that what is contained in the books you place in your children's hands, is not all they learn. Every word and act of the teacher, is forming the young minds around him. Is he coarse and brutal? They are learning coarseness and brutality. Is the impress of dissipation upon him? It will stamp itself upon their plastic minds. And in conclusion, be it remembered, that the influence of no rational being is indifferent; and therefore, only the truly good can exist without exerting an influence positively baneful upon the world, however loudly others may talk of reform.

Brooklin, Oct. 20th, 1854.

### POETRY.

James Russell Lowell has written a great many pretty things, and among the many is the following, which for suggestiveness and beauty, equals some of Hood's pathetic lines:

"Hark! that rustle of a dress,  
Still with lavish costliness;  
Here comes one whose cheek would blush  
But to have her garments brush  
'Gainst the girl whose fingers thin  
Wove the weary 'broidery in,  
And in midnights, chill and murk,  
Stitch'd her life into her work;  
Bending backward from her toil,  
Lest her tears the silk might soil;  
Shaping from her bitter thought,  
Heart's-ease and forget-me-not;  
Saturizing her despair  
With the emblems woven there!"

### Reviews, &c.

*The Anglo-American for Oct.; Maclear & Co. Toronto*

The present number of this interesting miscellany is fully equal to its predecessors. It contains a large and well executed engraving of Cronstadt, from the narrow channel nearest St. Petersburg, and a plan of Farm Buildings, which we recommend to the attention of our readers.

*Chambers' Journal for August and September; A. H. Armour, Toronto.*

The latter numbers of the Messrs. Chambers' world-renowned periodical, fully sustain the high character which this miscellany has enjoyed for a long term of years. A work of this kind is indeed an invaluable boon to a family.

*Norton's Literary Gazette; New York, C. B. Norton.*

This fortnightly publication contains all necessary information about books, libraries, and literature in general. It is carefully and ably edited, and cannot fail to be highly useful and instructive to all who are in any way interested in literary matters. To such we strongly recommend it.

### RECIPES, &c.

**WOUNDS.**—An effectual cure for a cut, bruise, or burn, is the inside coating of the shell of a raw egg; apply the moist surface to the wound; it will adhere of itself, leave no scar, and heal a wound without pain, more speedily than any other plaster or salve whatever.—*Medical Almanac.*

**SODA CAKE.**—Take one pound of flour, half a pound of sugar, three quarters of a pound of currents, two eggs, a few drops of essence of lemon, and a teaspoonful of carbonate of soda, which should be previously mixed with the flour; the whole to be mixed with half a pint of warm milk.

**RECIPE FOR THE WHOOPING COUGH.**—Take a large handful of garden thyme, pick it from the larger sprigs, and boil it well in a pint of the best white wine vinegar, strain it through a cloth, and add to the liquor a pound of sugar; then boil it again gently, keeping it well stirred, until it becomes a syrup; when cold put it into a bottle for use. A large teaspoonful, night and morning, is a sufficient dose for a child.

**WASH FOR TREES.**—Heat one pound of sal soda to redness in an iron pot, and dissolve it in a gallon of water. This wash, will take off all the moss and dead bark, and kill all the insects on all fruit trees or grape vines, and make them as smooth as though polished, and make old trees bear anew. Never whitewash a tree.

**TO THAW OUT A PUMP.**—Take a half inch lead pipe, put a funnel in one end and set the other on the ice in the pump. Now pour boiling water in the funnel, and the pipe will settle rapidly down through the ice. Now having drilled a hole through the mass, hot water will soon enlarge it so that your pump-rod will move and raise the water from below which will melt away the obstruction.

**GALLS FROM THE HARNESS OR SADDLE.**—Maj. Long, in his valuable account of his expedition to the Rocky Mountains, says that his party found white lead moistened with milk to succeed better than anything else in preventing the bad effects of the galls on the horses' back, in their march over the plains that border the mountains. Its effect in soothing or soothing the irritated and inflamed surface was admirable.—*American Farmer.*

The value of ammonia to growing plants arises from the fact that it is composed of the same materials that plants require, viz, hydrogen and nitrogen.



**ACIDITY.**—A teaspoonful of finely powdered charcoal in half a tumbler of water will effect a cure; it will also correct dyspeptic irregularities, with exercise it will perform a certain cure, unless the constitution be previously destroyed.—*Aurora*.

**SORE THROAT FROM COLD.**—Mix a wine glass full of calcined magnesia, with water, to the consistence of paste, and take a teaspoonful every hour or so during the day.—*London Lancet*.

**CROUP.**—Take an equal portion of pulverized alum and honey, (say, a teaspoonful of each,) mix them well and give a teaspoonful every two or three minutes till it operates as an emetic.—*Med. Journal*.

**LIME, LINIMENT FOR BURNS, SCALDS, &c.**—Lined seed or common olive oil and lime water, equal parts, to be shaken up together every time of use, for scrofula and syphilitic sores, and still more for burns and scalds.

**TO CURE HICCUGH, OR HICCUP.**—The spasm is caused by flatulency, indigestion, and acidity. It may be relieved generally by a sudden fright or surprise, or any sudden application of cold, also by eating a small piece of ice, taking a pinch of snuff, or anything that excites coughing.

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#### ADVERTISEMENTS.

#### A CHALLENGE:

WHEREAS Mr. John Wade, of Cobourg, Mr. W. N. Alger, of Brantford, and Peter Wood, of Stratford, three judges of Fat Cattle, at the Provincial Show, held at London, have given premiums to cattle not entitled to it, I therefore offer the said judges a challenge of TWENTY-FIVE POUNDS, the money to be given to the Middlesex Agricultural Society by the winner, that in Class H. No. 5, not noticed by said judges, is superior in Beef, and a fatter Heifer than the cow that got the first prize. I also offer a like sum, or any amount they like to name, on No. 6, in same class, not noticed.

To decide the bet I offer to take seven graziers, or butchers, as follows, viz: One from each of the following places—London, St. Thomas, Ingersoll, Woodstock, Brantford, Hamilton and Toronto, each to be chosen by the mayor or president of each city or town, as the case may be.

I further offer the said judges a challenge of FIFTY POUNDS, to be decided as above, and the money to be kept by the winner of the bet, that Mr. Little's Ox, which got the second prize, is a fatter Ox than the one they gave the first prize to. The party that loses shall pay all expenses of the said judges, as well as their time.

If the said judges will accept all, or any of these offers, they will communicate to "A Member of the Agricultural Society," Office of the *Middlesex Prototype*. The necessary legal forms to make the above binding, shall be ready at the *Prototype* office, when called for.

A MEMBER OF THE AGRICULTURAL SOCIETY.

London, Oct. 2, 1854.

#### RAM FOR SALE OR TO BE LET.

THAT fine old Imported Southdown Ram, the "Duke of Richmond" for Sale, or to be Let for the Season.

JOHN SPENCER.

Dorset Farm, Whitby, Oct. 25th, 1854.

#### Hydraulic and Agricultural Engineering.

MR. JOHN HENRY CHARNOCK, Hydraulic and Agricultural Engineer, (a Member of the Royal Agricultural Society of England, and author of its Prize Report on the Farming of the West Riding of Yorkshire, as well as other papers on Drainage, &c., published in his Journal; and late an Assistant Commissioner under the English Drainage Acts.) begs to offer his Professional Services to the City and Town Authorities, and to the Agriculturists of Canada, and to solicit the honor of their patronage and support.

Having for several years past devoted special attention to that branch of Engineering which embraces more particularly works of Town Sewerage and Water supply, the Drainage, Irrigation and general Improvement of Land, the planning and erection of Sewerage and Drain-pipe works, Farm Buildings and Machinery, together with the laying out of Farms and Ornamental Grounds, Mr. Charnock ventures to think that such experience, coupled with a practical knowledge of the approved systems and appliances of the day, will enable him to render valuable and efficient services to those who may favor him with their commands.

Mr. C. is furnished with testimonials from numerous parties of known standing and repute, which he will be happy to submit to those who may contemplate employing him. And all communications addressed to him, CITY OF HAMILTON, CANADA WEST, will have prompt attention.

JOHN H. CHARNOCK.

OFFICE, JAMES'S STREET, HAMILTON.—At Mr. Simons' Land Agent, close to the St. George's Hotel.

Hamilton, August, 1854.

#### ENGLISH CATTLE.

TO AGRICULTURAL SOCIETIES and OTHERS requiring the best bred Cattle from England—comprising:

PURE BLOOD HORSES, SHORT-HORNED CATTLE, NORTH DEVONS, HEREFORDS, Ayrshire and ALDERNEY COWS.

Also: Pure Bred Southdown, Cotswold and Leicester Sheep.

Also: Suffolk, Essex and Berkshire Swine; imported on commission into any part of Canada and the United States, by Messrs. Thos. Betts & Brother, of Herts, England.

Cattle ordered previous to the 1st of September will be insured if desired.

Every information with regard to terms and shipment of Stock to America will be strictly attended to by applying to W. EVANS, Esq., Secretary to the Board of Agriculture, Montreal, or to J. M. MILLER, 81 Maiden-Lane, New York City.

THOS. BETTS & BROTHER,  
Herts, England.

Toronto, August, 1854.

THE

#### CANADIAN AGRICULTURIST,

EDITED by G. BUCKLAND, Secretary of the Board of Agriculture, assisted by Mr. H. Thomson and the Proprietor. It is published on the 1st of each month by the Proprietor, William McDougall at his Office, corner of Yonge and Adelaide Streets.

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VOL. VI.

TORONTO, DECEMBER, 1854.

No. 12.

Agriculture, &c.

TOWNSHIP OF YORK FARMERS' CLUB.

IMPROVED BREEDS OF CATTLE.

At a meeting of this club on the evening of Wednesday, the 6th November, E. W. Thomson, Esq., opened the discussion by reading the following paper:—

GENTLEMEN,—In addressing you this evening on improved breeds of cattle, I shall briefly bring before your notice the several breeds with which we are acquainted, describing their excellencies, showing wherein they differ from each other, and the advantages that result to the farmer from making a judicious selection of stock to breed from. Before attempting to describe the varieties of the ox kind that have of late attracted the attention of breeders, and with respect to which there exists a variety of opinions, permit me to offer a few general remarks, drawn from different sources, as well as from my own observation. In the *American Farmers' Encyclopedia*, we find under the article Cattle, the following:—

“That the ox has been domesticated and in the service of man from a very remote period, is quite certain. We learn from Genesis iv. and 20th, that cattle were kept by the early descendants of Adam, preserved by Noah from the flood waters. The original breed of our present oxen must have been in Mount Arrarat; and from thence dispersing over the face of the globe, altering by climate, by food and by cultivation, originated the various breeds of modern ages. That the value of the ox tribe has been in all ages and climates highly appreciated, we have abundant evidence. The natives of Egypt, India, and of Hindoostan, seem alike to have placed the cow amongst their deities, and, judging from her usefulness in all climes, no animal could, perhaps, have been selected whose value to mankind is greater.” In nearly all parts of the earth, cattle are employed for their labor, for their milk, and for food. In Southern Africa they are

as much the associate of the Caffres as the horse is of the Arab. They share his toils and assist him in tending his herds; they are even trained to battle, in which they become fierce and courageous. In Central Africa the proudest ebony beauties are to be seen on their backs. They have drawn the plough in all ages; in Spain, they still trample out the corn, in India raise the water from the deepest wells to irrigate the thirsty soil of Bengal. When Cæsar invaded England they constituted the chief wealth of its inhabitants, and they yet form no inconsiderable item in the estimate of that country's abundant riches. According to Mr. Youatt's estimate (who is considered good authority on all matters connected with live stock), it would seem that 1,600,000 head of cattle are consigned to the butcher every year in the United Kingdom, and the value of the entire national stock of all kinds of cattle, sheep and pigs, amounts to nearly £120,000,000 sterling.” An excellent paper on the origin and natural history of the domestic ox, and the allied species, by Professor Wilson (*Quarterly Journal of Agriculture*, vol. 11, pp. 177) may be consulted with advantage by those who wish for more information on this head. The value of the ox to the pioneers of the forest is undeniable, and needs no illustration. Those who have had experience in the clearing of wild lands, can bear testimony to it, and in my opinion, he might be employed on old cleared farms to a much greater extent than he is, with decided advantage. And as to the cow, it is hardly possible to do justice to her value; rich and poor are alike dependent upon her for the comforts of life. Her produce constitutes the main support of many a poor man's family; and if she is properly cared for, the sum invested in her purchase is one of the very best investments that can be made. In Belgium, the cow is an object of the greatest care and attention, and amply repays the owner for that care, for in addition to the milk she produces, she is trained to draw the plough, harrow and cart, and is, on many of the small farms of that country, the only beast of draught employed. This fact is only mentioned to illustrate



the value of the cow in various countries, not to show that it would be desirable she should be so employed in this country, as our farms are happily not of such contracted dimensions that the team work upon them could be performed by a couple of cows, giving milk.

The intention of a paper of this kind is to show the advantages that would result to the country by a determination on the part of those employed in the rearing of stock to obtain the most profitable breed; and for this purpose it may not be unprofitable to revert to a few statistics, which are in part supposititious:—say the county of York, containing something under 100,000 inhabitants, has 25,000 cows, the present value of which is £100,000, or £4 each; there would be no difficulty in raising the value of the same number in four years' time to £150,000, by the employment of none but the best male animals. Then, again, suppose 5,000 calves are killed for veal, and that they are worth on an average £1; I am quite sure that by the same means their value could be increased 50 per cent., and the difference would be still greater with respect to the heifers, cows, steers and oxen, that go to the shambles for beef, were the farmers of the county to select their breeding animals from those most famous for their early maturity, and propensity to thrive and fatten. I know from experience, that grade steers from common cows, by a Durham bull, will weigh at three years old 1,000; whereas the ordinary weight of cattle of the same age, is from 6 to 700lbs at the most. Even half breed cattle will produce to the farmer as great a yield at three years old, as ordinary cattle will at five—saving him two years' keeping—a saving of some considerable importance. Now, supposing this statement to be correct, and that there is no falling off in the dairy produce, who will deny the advantage of breeding from the best stock? But when, in addition to the foregoing, it can be clearly demonstrated that very large additions can be made to the produce of the dairy by a judicious selection of breeding animals, it becomes a matter of paramount importance to enquire into the merits of the different breeds, the special excellencies of which have been contended for by their advocates, and upon which a difference of opinion exists amongst those who have devoted much time and attention to the subject. I may here enumerate some of the characteristics of the various breeds, as derived from different authorities, and my own observation, premising that there are a few general remarks applicable to all from the Farmers' Encyclopedia:—"The first point to be ascertained in examining an ox, is the purity of its breed, whatever kind that breed may be, for that will give the degree of the disposition to fatten of the individuals of that breed. The purity of the breed may be ascertained from several marks: the colors of the skin of a pure breed of cattle, whatever these colors are, are always definite. The color of the bald skin on the nose and round the eyes, in a pure breed, is always definite, and without spots. This last is an essential point, where horns exist, they should be smooth, small, tapering, and sharp-pointed, long or short, ac-

cording to the breed, and of a white color throughout in some breeds, and tipped with black in others. The shape of the horn is a less essential point than the color." Applying these remarks to the different breeds, as illustrative of the point which we have been considering, we have the definite colors of white and red, in the Short Horns. The color is either entirely white or entirely red, or the one or the other predominates in their mixture. The skin on the nose and round the eye is uniformly of a rich cream color. The Ayrshire breed, in its purity, is also distinguished by the red and white color, but always mixed, and the mixture consists of spots of greater or smaller size, but blended together. The color of the skin on the nose and round the eyes is not definite, but generally black or cream colored. In other points, these two celebrated breeds differ from one another more than in the characteristics which I have described. In the West Highland, Angus, and Galloway breeds, the color of the skin of the nose and round the eyes is indicative of the pure blood of the black colored cattle, but a cream colored nose may frequently be observed among those of other colors. The characteristics above given will certainly apply to the purity of the blood of the Short Horn and Ayrshire breeds, if not to the West Highlanders and Galloways. The Devons, a breed decidedly popular with many, are distinguished by a beautiful symmetry of form, sprightly appearance, and uniform mahogany red. The Herefords are known by their white faces and breasts, as well as long, slim horns. Each of these breeds has its advocates, and, no doubt, possesses valuable properties; their distinctive characters I shall endeavor to give in their turn. Another breed of cattle, that has gained notoriety in England, is the Jersey. In their color and general appearance, they very much resemble the Devons, but are larger and something coarser. The oxen are more highly esteemed for work than any other in England, but the cows are not general favorites, on account of their not giving so large a quantity of milk as some other breeds. The Holderness and Suffolk cows are superior. The Sussex cow is of an uneasy temper. They are said to be kindly feeders, notwithstanding, and to take on fat very fast when dry.

There are some favorite breeds in Ireland, and the Kerry cow, though a small animal, is very highly esteemed for her milking qualities.

A person who travelled much over England, and paid particular attention to the cattle of the country, thus describes the Alderney or Guernsey cow:—"Of all the cows which I ever saw, the handsomest—that which gave my eye the most pleasure—that which gave the best promise of being what a cow should be, was an Alderney, or rather improved Guernsey cow, brought from one of the Channel Islands. She was two years old, compact, and well shaped, showing what could be effected by attention to feeding. This breed are in general, skinny, thin, bare-boned, and presenting little more than skeletons of animals. They are valued for their milking qualities, and that not so much for the quantity of milk they give, as for its extraordinary richness and

creamy quality, in which certainly they surpass all other breeds." It is stated that no animals will thrive faster when not in milk, and their size is not always inferior. The same writer mentions having seen some breeds of fine looking and good-sized cows, of this breed. Few gentlemen or noblemen in the country are without one or more of these cows, for the supply of their tables. Several other breeds might be mentioned, but I will now proceed to give a description of some of the most highly esteemed as Dairy or Milking Stock. The milking or dairy properties of the different breeds have been a matter of much discussion; and it would be difficult to find a unanimous, perhaps even a general acquiescence, in any opinion. Jackson, in his treatise on Dairy Husbandry, says:—"Of the various breeds and cross breeds now in use, there are a few which enjoy the best reputation; we may name for example the Old Yorkshire Stock, a cross between the Teeswater and Holderness breed, the Long Horned, or Lancashire breed, the Short Horned, or Dutch breed, the Middle Horned of Devonshire, Sussex, and Hereford, the Ayrshire breed, the Alderney breed, &c. Some of these merit particular attention. We should first point out the Devonshire Cow. This is a very handsome animal, well set upon its legs, straight along the back, small muzzle, and generally of a red color. Both as oxen and cows, this kind of animal feed well at an early age; the cow affords a fine quality of milk, but only when fed on good pasture. The Hereford breed of cows is reckoned the best in England, as respects the production of milk. It is broad across the hind quarters, narrow at the sirloin, neck and head well proportioned; the horns, of a medium size, turn up at the points, the belly is generally of a deep red, head and breast white. This cow is considered as very valuable for fattening, and it has been found fit for the market at an earlier period than any other kind."

The Galloway breed of cattle is well known for various valuable qualities, and easily distinguished by the want of horns. It is broad across the back, with a very slight curve between the head and quarters, broad at the loins, the whole body having a fine round appearance. The head is of a moderate size, with large rough ears, chest deep, legs short, and it is lean in the neck. The prevailing color is black; those of this color being thought the most hardy, although this varies. This breed is highly esteemed, as there is no other breed which arrives at maturity so soon, and their flesh is of the finest quality. The milk is very fine, but is not obtained in very large quantities. Large numbers of this breed are sent annually to Smithfield market, and it is remarkable that they are generally in as good condition after the journey as before. They are now, however, taken up to Smithfield by rail. In the year 1851, I myself saw 3,000 of them at once in that market, as plump and fat almost as if was possible for them to be. The Suffolk Dun, also a hornless breed, is supposed to be a variety of the Galloway, from the general resemblance. The Ayrshire breed is one of the most valuable in Scotland, if not throughout the whole country.

It is of the smaller sized race, and according to Mr. Aiton, has been obtained from the indigenous cattle of the county of Ayr, by judicious selections to breed from, and skilful treatment. Professor Low is of opinion, that males of the Short Horned breed must have been introduced into the country, from the resemblance which some Ayrshire cows have to that variety. The characteristics of this breed are thus described by Mr. Aiton:—"Head small, rather long, narrow in the muzzle, eye small, smart, and lively, horns small, crooked, and set at considerable distance from each other, neck long, rather slender, tapering towards the head, with no loose skin below, shoulders thin, forequarters light, hindquarters large, back straight, broad behind, the joints rather loose and open, carcase deep, legs small and short, with firm joints, udder capacious, stretching forwards, the milk veins large and prominent, teats short, all pointing outwards." The Ayrshire cow is very docile, feeds well, is easily managed, and, as a Dairy cow, is equal to any other. It is inferior, for feeding, to the Devons, Sussex, Hereford, Lancashire, and Durham breeds. Many of the Ayrshire cows, when properly fed, will yield from 6 to 8 gallons of milk per day, during part of the summer. The quantity varies much during the year, from 1½ to 6 gallons or more, and the highest average of the milk yielded by this breed is 1,000 gallons per annum. It is only some of the finest cows that will yield such a quantity as this; from 500 to 750 gallons may be calculated as the most general yearly produce. Every 2½ gallons of milk will afford a pound of butter. About 25 gallons of milk will give a stone of cheese." The Short Horn breed is considered of great value, both for milk and feeding. They are large in the carcase, well proportioned, broad across the loins, chine full, legs short, head small, but handsome, neck deep, but in keeping with the size of the body, color generally red, white, or red and white mixed, spotted or roan, hide thin. The flesh of this breed is thick, close-grained, retaining the juices well, and, from this circumstance, is in repute for victualing ships going on long voyages. Regarding the milking qualities of this breed, Mr. Dickson, an eminent cattle dealer, who has had extensive experience, says:—"It has been frequently asserted that the Short Horned cows are bad milkers, indeed that no sort of cattle are so deficient in milk; but this deficiency of milk does not proceed from the circumstance of the cows being of the Short Horned kind. Had the flesh been neglected as much as the milk, by the eminent breeders, and the property of giving milk as much cherished as the development of flesh, the Short Horned cows would have been deep milkers. Indeed it is not to be doubted that when the general secreting powers of the animal system have been increased, the power of secreting milk will be increased with the power of secreting fat. All that seems necessary is to encourage the power of that secretion which is most wanted for the time. It would be to desire an impossibility, to procure the full development of flesh, fat, and milk, at the same time; but there is no absurdity in de-



giving a large secretion of flesh and fat at one time, and a large secretion of milk at another, from the same cow. Accordingly this is the very character that has been acquired by Short-horned cows. They will yield from 6 to 16 quarts a day throughout the season, and they are such constant milkers that they seldom remain dry above six weeks or two months before the time of calving." Further he says,—"I know a Scotch breeder who had a Short-horned cow which gave fifteen quarts a day during the flush of the grass in summer, and never went dry for two seasons." Crosses between the Short-horns and Galloways have produced excellent milkers. Having given the testimony of two breeders as to the merits of the Short-horned breed of cattle, I would remark that there is no breed that has maintained their superiority in England equal, or nearly equal to them. The high prices that they have for many years past sold for, and still continue to command, is, I think, very decided evidence in their favor; and in the United States they are in very greatly more favor than any other breed. Some of our spirited breeders in Canada have realized prices for calves, heifers, and bulls, that would have purchased herds of common cattle. My own experience convinces me that great advantages will result to any farmer who procures the use of a good Short-horned bull for his cows, and that if it were possible to obtain a sufficient number for the whole country, the value of the cattle would be doubled in four years. I hope the time has now passed away when the miserable animals that have been allowed to run at large upon the roadside will be tolerated, and that all who rear cattle will understand their own interest well enough to induce them to procure male animals—at least from one or other of those breeds—the excellencies of which have been proved beyond a doubt. I am quite aware that a strong prejudice exists in favor of what is called the native breed of Canada. Now, it is hardly necessary to assert, that there is no such thing as a really native, indigenous breed of cattle in Canada; although some persons have entertained an idea that there might have been. The "Native Breed" were introduced into this country, from time to time, by settlers, and are the produce of cows of various breeds, kept up by the introduction of superior animals from time to time. Since my own recollection, I can name several—the Wixon family, of Pickering, had the first valuable animal that I recollect. When the common calves of the country were worth four or five dollars each, they were able to get for theirs ten, fifteen, twenty, and twenty-five dollars. Mr. Cornell, of Scarborough, introduced an excellent bull, and traits of his blood are still visible in that township; but for want of care and attention they have become nearly extinct. Had a Sir William Quinton, a Mr. Milbank, or a Mr. Charles Colling, or any other equally spirited and intelligent breeder, been here, to keep none but the very best of those animals, and introduce, from time to time, such as would remedy perceptible defects, the result might have been as successful there as in England; but in the then condition of this new country, such a course was not possi-

ble. Now, however, the case is very different, and it only requires a combined effort, on the part of the farming community, and a determination to breed from none but the best of the several improved breeds, that have been introduced, with a continuation of the spirited efforts of the few importers who have done so much for their country's benefit, to raise our stock of cattle to the highest degree of eminence—a consummation which I hope may be realized at no distant day.

Some conversation then took place amongst the members present, on the subject of the evening, and it was

*Moved* by Mr. Lee, seconded by Mr. Hill, that the best thanks of the meeting be given to Mr. Thomson for the excellent paper on cattle, read by him, which was carried unanimously.

The next meeting was appointed to take place at Davis's Inn, 4th concession, on December 6th.

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#### MR. MECHE ON LANCASHIRE AND CHESHIRE FARMING.

At a recent meeting of the Manchester and Liverpool Agricultural Society, held at Altrincham, Mr. Mechi made some very pertinent observations, which we subjoin:—

Mr. EDWIN CHADWICK proposed "The Royal Agricultural Society of England," and in the course of his address said that in making inquiries to ascertain where there was the least drainage, and most need of sanitary reform, he made inquiry of the candle manufacturers in London as to those parts of the kingdom whence they got the greatest quantity of rushes, and of the finest quality? The answer was, that the greatest quantity and the finest quality of rushes came from the counties of Lancashire and Cheshire. (Cheers and laughter.) Drainage would remove rushes from the land, and would repay itself in three years, according to his experience. (Cheers.)

Mr. Mechi, of Tiptree Hall Farm, in Essex, on rising to respond, was received with loud cheers. He said: I believe, my Lord, it falls to my duty to return thanks on behalf of the Royal Agricultural Society of England. I have a very great respect for that society; I believe it has conferred very great benefits on British agriculture; and I believe if every farmer in the kingdom had the journal of that society on his table, it would be not only to his credit, but his profit. (Hear, hear.) I want to see British agriculture more elevated in profit, in sentiment, and in character. It wants more education, more intelligence, and more capital, and that can only be attained by the concurrence of landlord and tenant. I believe we are never so well off as when we are dissatisfied with ourselves. If Manchester had not been dissatisfied with the spinning wheel, what would Manchester have been at this moment? And so it is with agriculture. Believe that you are only just beginning to act, and you will do well for yourselves. But you cannot do it with your present appliances. Your



land is undrained, your buildings are unfit for a respectable farmer—(applause)—your fields are too small, and your hedgerows are too numerous. ("Whose fault is that?") I have been told, but I do not believe it, that it is because game is respected that your fields are small. But I won't believe it, because I know that the aristocracy of this country have a very high sense of their position and dignity, and are ready to fall in with that which is for the benefit of the country. We want to know more of the requirements of agriculture. In the largest fields in Norfolk I have seen four fields for a thousand acres [cheers], and there are more partridges in the fields of Norfolk than you ever see here. And how is this done? Because the farmers of Norfolk, liking to see the liberal landed proprietors enjoy their sport, drill a few rows of buckwheat in their turnips, and they always have capital partridge shooting. [cheers.] I tell you, that you cannot go on in Lancashire and Cheshire as you are going on now. [Cheers.] Your farmers cannot spend money enough—they cannot be intelligent enough—they cannot be good customers enough to the other classes of the community, because your system is a starvation and poverty system. [Applause.] Excuse me for speaking honestly, but I believe that railways and the facilities of intercourse between man and man in this kingdom will cause a great change—will enable farmers and landlords of any poor districts to go into well-farmed districts in other parts of the country which have been reclaimed and improved and made fruitful by the investment of capital and intelligence. I do not charge upon agriculture any particular prejudice more than belongs to any other class of the community. We know that in manufactures; and in every invention and improvement, we have always had great contention against old customs and prejudices. But I address myself now to the manufacturers of Manchester. We know there are men in Manchester who, by science and capital, are now becoming princes, and are purchasing the broad lands of the kingdom. I say to them: "You have done great things—you have got a magnificent city, but take care to learn agriculture. Take care to raise amongst you, for money is no object, a college in which agriculture can be taught as a science." (Cheers.) I said so to-day to a manufacturer, and he said, "Mr. Mechi, I will give you £500 for that object to-morrow." (Cheers.) To the great landed proprietors I would say: "Look out amongst your tenant farmers for some son—some young man whose father, having a desire to make his son more than himself, has given him a good education, and offer some premium, pay some part of the cost to the tenantry on your estates, that your sons may go to those colleges now existing. Some years ago, at great personal and pecuniary inconvenience, I took an interest in the college at Cirencester, in Gloucestershire. That college was founded for the sons of the farmers of England, but, I say it with great truth, that the education was so inferior, that, when we got professors of the highest class, we found it was throwing pearls to swine; for the education received

by that class of individuals would not enable them to imbibe that science which would have been so beneficial to them. Therefore I say to the landlords, and particularly the Manchester gentlemen who have plenty of money and plenty of ability—establish a noble college in which the agriculture of this country shall be taught. You have not got all the difficulties to go through that we had at Cirencester. That college is established, and we are turning men into the world who will be an honor to agriculture. Do you the same. I know you will do it, and why? If you ask me why I am here to-day, I say it is to do honor and give my support to an excellent man in Manchester, Mr. Brooks. (Loud cheers.) I felt that when Mr. Brooks threw open his farming operations and drainage to all England, with a noble and liberal spirit, he was doing a great good for agriculture. I say, as a general rule, if we had more knowledge—and I have had to buy my experience—as we have all had to buy our experience—but, I say, if you had great and established rules and principles of action, those questions of drainage, farm buildings, steam engines, and other things, would not be questions of dispute, but they would be accepted as common and every-day occurrences; and I have no doubt we shall have no discussion on the subject fifty years hence. (cheers.) They will be matters of course, like your breakfast, dinner, and tea. There was one point touched upon by Mr. Chadwick, which is of the utmost importance. We, as farmers, think that if we keep 200 sheep to 100 acres we have our farms well manured; but when you have 400,000 sheep in Manchester—(cheers)—or what is better, that you have 400,000 men, women, and children, with all their cats and dogs (laughter), horses, and everything else, and allow all these advantages to be wasted, you are not sane men. Now you are coming to Board of Health principles, and carrying away all this in tubes; and I hope you will find some spirited men wise enough to look at profit and say, "I will give £1,000 a-year for the sewerage of Manchester. I will get an act of parliament to bring it fifteen miles away. I shall put it on 10,000 acres of land, and I shall make £100,000 out of it." [Applause.] I am not speaking theoretically on this question—I have laid down two miles of piping myself, on my own farm, for the conveyance of liquid manure; and I can only say that I should be too happy, if I were within five miles of a town, to be able to get the manure from it. I assure you it will pay. I tell you honestly you could put a ton of liquid manure, send it five miles, put it on your farm, and throw it down in a shower, plough it, spread it in the soil for three farthings a ton. If you don't do that, I can only say that the men of Manchester are not what I calculated them to be. The Almighty has blessed us with a bountiful harvest—consequently Consols go up, money gets cheap, labor will be well employed, and our friends in Manchester are rejoicing at the prospect of an abundant trade. I say to you, on public and on national grounds, do all you can to mitigate the vicissitudes of the season which are sometimes so fatal. You can only do that by



manure and drainage—putting in water where it is dry—taking it off where it is wet. You ought to be the richest agriculturists in the world. Why? because you not only consume all you grow, but you import every imaginable thing that is good for man. Your port wine, your sherry, your turtle, coffee and sugar, all ought to add wealth to this country. You bring it, throw it down the river, and go to Peru to buy burnt dung at £10 per ton. [Hear, hear.] I conclude by saying, on public grounds, but at some personal inconvenience, that my farm is open to any gentleman who wishes to carry out these great and important measures so beneficial to us. Let them send their men to my farm—let them work with my men—let them save all the costs of the experiments which the introduction of a new system entailed on me. They are welcome to it, and I do it on public grounds. Mr. Meehi sat down amid prolonged cheering.

#### NEW YORK STATE AGRICULTURAL EXHIBITION, 1854.

*From the Journal of the Society.*

The Fourteenth Annual Exhibition of the Society was held at Hamilton Square, in the city of New York, from the 3rd to the 6th of October—the American Institute and the New York Horticultural Society uniting in the Exhibition. The arrangements of the grounds, under the directions of Messrs. L. G. Morris, E. G. Faile and Thomas Bell, on behalf of the Committee of Arrangements, were of the most perfect character, and afforded to exhibitors in every department more complete and satisfactory disposition of their stock and articles than at any previous exhibition of the Society. For the two first days of the exhibition the weather was very unfavorable, and retarded much the arrangements as well as the attendance. The two last days, however, were very favorable, and the attendance, up to the very close of the exhibition, was quite large. In the stock department, the show of cattle, sheep and horses, was of unusual excellence, and has never been equalled in this State, and it is doubted whether any exhibition in this country equal to this, in point of quality, has ever been made. The show of horses was large and excellent in the classes exhibited. The display of mules was one of the best that has ever been made in our country; and must exert a very important influence in introducing this useful animal to the notice of our farmers. There were upwards of sixty on exhibition.

The implement department was fully represented by a very choice display of the most improved and valued implements. Of mowers and reapers, the very latest improvements were on exhibition, and some of them a very great advance upon any heretofore shown.

The fruit and flower department was of unusual excellence; the western part of the State, as usual, exhibiting some of the finest specimens of fruit. Messrs. Ellwanger & Barry, A. Frost & Co., N. & E. S. Hayward, of Rochester; E. C.

Frost, of Chemung; N. Crittenden, of Ithaca, and H. G. Dickinson, of Lyons, were among the largest contributors: Mr. J. W. Baily, of Plattsburgh, received the Silver Cup, for the greatest number and best display of apples. Hovey & Co., of Boston, Mr. Potter, of Princeton, N. J., and Mr. Pennington, of Illinois, added largely to the interest of the exhibition by their splendid display of pears, grapes and apples.

The vegetable and grain departments, as well as the dairy, were very fairly represented, though not as extensively as they would have been in the interior of the State, in a good farming district.

Poultry formed an interesting portion of the exhibition, and the various varieties were creditably represented.

The number of cattle, horses, mules, sheep and swine, on exhibition, was 1,250; of poultry, 416. Entries of grain, vegetables, implements, manufactures, fruits and flowers, &c., 415. Receipts, \$9,432.

On Friday, the Society was called together under the large tent of the Society, on the Show Grounds, Wm. Kelly, President, in the chair. A very impressive prayer was offered by the Rev. Dr. Adams, of New York.

#### REMARKS BY MR. KELLY.

It is to the farmer a cheering fact, that on occasions like this such multitudes are always assembled, for it gives evidence that there is everywhere in the popular mind a deep abiding interest felt in the progress of agriculture.

I need not tell you that this is the first time of holding a State Fair in the city of New York. In view of this movement, it was feared, by some of our most experienced members and officers, that we were doomed to disappointment; that the inhabitants of the city were too much engrossed by business, or too regardless of the objects we seek to advance, even to visit our exhibition when we should bring it to their doors. The crowds of people that have been seen on these grounds for the last three days, prove that these apprehensions were not well founded—no.

Agriculture, earliest of all the arts, has visited the home of her descendants, her daughters. Mechanics, Science and Commerce; they have welcomed her, acknowledged that they spring from, and are dependent upon her. She in turn is ready to confess her obligations to them. To the Mechanic Arts, she owes those ingenious and useful implements by which the labors of the husbandman are lessened, and rendered much more effective. Thus, by her aid, the cost of farming is made *cheaper*: Science applies Agricultural Chemistry to analyze the soils; she detects their deficiencies, and teaches how best to supply those defects; she thus makes farming *productive*. Commerce takes these surplus products, and, by her system of exchanges, carries them to a market where they are needed, and where they will command a good return; farming is by her aid made *profitable*.

It is interesting and instructive to reflect that we are all mutually dependent; that our interests are bound up together; that we are members, so to speak, of one social body, each being essential

the completeness and prosperity of the whole I am most happy of the opportunity thus publicly to express the thanks of the State Agricultural Society to the authorities of this city, for the kind and cordial reception they have given us. They voluntarily tendered us the use of these most beautiful grounds, and have done everything they properly could do, to facilitate us in the management of the Fair. To his Honor the Mayor, and to the Presidents of the Board of Aldermen and the Board of Councilmen, our thanks are especially due.

And here I must be allowed to speak of the disinterested course pursued by the two great Institutions of your city, having at heart kindred objects with our own. The time-honored American Institute, represented here by her venerable Secretary, and the Horticultural Society, many of whose most efficient members are now present, cheerfully came forward, and not only consented to forego their usual exhibitions, but agreed to unite with us on this occasion, that so, by a three-fold effort, this Fair might be—what you are all ready to declare it—worthy of the great City and State of New York.

But I will not longer detain you—you are impatient to hear the distinguished gentleman who is to address you—a man known by fame to all—respected by all. I beg leave to introduce to this audience the Honorable John P. Hale, of New Hampshire.

Mr. Hale delivered an Address of great interest and power, before a very large and attentive audience. At its close, on motion of Hon. John A. King, of Queens, the thanks of the Society were tendered to Mr. Hale, for his very instructive and eloquent address; and a copy of the same was requested for publication in the Transactions of the Society.

#### FARMS IMPROVED BY KEEPING SHEEP.

To some extent, keeping sheep is found to improve a farm, as they consume much feed that is left by other stock and lost, and at the same time enrich the ground, and give it a better and smoother appearance. This is shown by instances quoted in the Transactions of the Norfolk Agricultural Society, which we relate in brief:—

A man, having a small farm, formerly kept forty sheep, four cows and one horse, and had food enough for them the year round. The price of wool falling, he sold his sheep, and for a number of years has kept other stock altogether. He now keeps but three cows and one horse the year round, and pastures two cows extra through the summer, sells very little hay—not half enough to keep another cow; he has the same amount of pasture and mowing as when he kept the forty sheep in addition to his other stock, and yet his farm does not look near so well as then. He used to raise turnips among the corn for his sheep to eat in winter, and gave them besides a few bushels of grain. The lambs, however, more than paid for his extra feed.

Another farmer for a great number of years kept

about sixty sheep, eight or nine cows (or other stock equal), one pair of oxen and one horse. After keeping the sheep for a number of years, he found he could then keep as large a stock on his farm with the sixty sheep, as he could keep without them before; showing that they had improved the farm to furnish their own support. To stock a farm entirely with sheep would not be so profitable as to keep a limited number—yet it would pay as well as other stock. The object is to keep enough to consume that part of the vegetation peculiarly fitted to sheep, and which other stock will not eat, adding at the same time enriching elements to the pastures and yards by their manure. It is the opinion of many farmers, that pastures for other stock may be improved by keeping a small flock of sheep upon them a portion of the time, and the opinion seems fairly supported both by reason and experiment.—*Wool Grower.*

#### SHEEP IN WINTER.

In the first place, sheep should be provided with ample and warm accommodations for shelter. Therefore, if you have not one already, build a shed of sufficient dimensions to accommodate the number of sheep you have to winter. If the number of sheep be large, have a shed for every fifty or sixty head. Each shed must communicate with a tightly-enclosed yard. Access to each shed must be through an opening at one of the ends; ventilation other than the doorway must be provided. The floor of the shed should be covered in the first instance with three or four inches in depth of clean straw, when from the accumulation of sheep dung and discharge of urine the straw becomes dirty, the surface must be covered with fresh straw. Plaster should be strewn over the floor at least once a week.

For convenience of feeding grain or roots, a trough ranging round the shed should be provided. The sheep should have salt always accessible to them. The best plan to secure this would be to have a trough in which rock-salt should be constantly kept. The sheep should have access to the yard at all times.

Three pounds of hay, or fodder, or its equivalent in meal or roots per day will sustain each head of sheep, which should be given them thrice a day, viz:—early in the morning, at noon, and at an hour before sunset. Occasional feeds of roots, say twice or thrice a week, are conducive to health—potatoes, or rutabaga, or common turnips, will answer. Water should be given to the sheep twice a day, to wit, in the morning and in the evening.

Sheep can be kept housed during the winter, altogether, to advantage—by a little extra care, as above—letting them out in fine weather for airing and exercise.—*American Farmer.*

#### CLASSIFICATION OF SOILS.

The want of some system of classifying soils has long been felt. The arbitrary terms in common use convey no definite idea of the subject.



A writer in the *Farmer's Magazine* recommends a classification based on analysis. We are not prepared to say that this mode is at present practicable, but it is at least worthy of attention. His plan is as follows:—

1. *Silicious soils*, containing from 90 to 95 per cent. of sand. These would be divided, on the same principle, into blowing sand, coarse sand, good agricultural sand, and calcareous sand.

2. *Loamy soils*; 70 to 90 percent. of sand separable by washing, subdivided in coarse sandy loam, fine sandy loam, rich loam, and calcareous loam.

3. *Clayey soils*, with 40 to 70 per cent. of sand; divided into clay loam, clay, and calcareous clay. Each of these soils, termed calcareous sand, calcareous loam, &c., contains 5 per cent. of lime.

*Marly soils* constitute a fourth group, in which the proportion of lime ranges between five and twenty per cent., and are divided into sandy marls, loamy marls, and clayey marls.

*Calcareous soils* contain more than 20 per cent. of lime. They are divided into sandy calcareous, loamy calcareous, and clayey calcareous. While in calcareous sands, clays, and loams, the proportion of loam does not exceed 5 per cent. The difference of composition denoted by difference of name, is similar to the sulphates and sulphites of chemical nomenclature, which contain different proportions of sulphuric acid.

According to the quantity of pebbly fragments yielded by a square yard, or by a cubic foot of the soil, they may be denominated *gravels* or *gravelly sands*, loams, and clays.

*Vegetable soils* vary from the common garden mould, which contains from 5 to 10 per cent. of vegetable matter, to the peaty soil, in which the organic matter is about 60 to 70 per cent. They will be vegetable sands, loams, clays, marls, &c.

Considered geologically, soils may be classed in three groups:

1. *Local soils*, or those derived exclusively from the debris of the rock on which they rest, unmixed with materials of other rocks.

2. *Erratic soils*, containing the unmixed materials of several, and, in many cases, distinct formations, transported by currents of water which, at the close of what is called the testary period of geology, acted irrespectively of the present lines of drainage and sea levels.

3. *Alluvial soils*, composed of finely divided matter, transported and deposited by rivers and tidal currents, in subordination to the existing levels and lines of drainage.—*New England Farmer*.

☞ The love of admiration is the canker upon the heart of many a lovely woman. It is vanity in its worst form. It insinuates itself into the moral nature and either makes the woman an object of vulgar stare, or public notoriety. When her beauty is gone, the absence of the stimulant to her weakened nature leaves her irritable and disappointed. Beauty is a dangerous inheritance, and requires a special duty from the owner of it. The destiny of a beautiful woman is nobler than to be stared at by a vulgar crowd, or flattered by heartless society.

## GIBBS'S ROTARY DIGGING MACHINE.

At a late meeting of the American Institute, Professor Mapes illustrated this new agricultural implement by a working model. The inventor has improved the original, and is now about to add one of the Mapes subsoil ploughs to loosen the ground forward of the teeth, and keep them steady without so much weight. Professor Mapes thinks this machine, judging from experiments with the first rough machine, will do more than three times as much work as a plough, and more than three times as well, with the same team.

The plough requires just as much propelling power to overcome the friction of the land side as it does to turn over the furrow slice, and all that friction is worse than thrown away—it compacts the land and injures it.

There is no power lost in this implement; it is like forking over the soil, and will work three feet wide and fifteen inches deep with one pair of oxen, rendering the land more pulverulent than a dozen ploughings.

Mr. Meehi said the plough is doomed, in speaking of Samuelson's machine; yet this is much more perfect. In his machine much is lost by friction of gearing—in this there is none—the weight of the machine trips the teeth and throws them out. His machine requires six horses, this two oxen. English farmers pay 40s. an acre for spading and 20s. for ploughing, and find their account in the extra cost of the work. The Harsimus gardeners, who raise vegetables for this market, pay \$75 an acre rent. They could not pay half of that if they depended upon the plough alone. By the spade they get three or four crops in a season. True, they manure high, but that is not all. Unless you render your land pulverulent, you might as well put your manure in the garret to raise potatoes in the cellar. Land that is well forked up will produce more without manure than poorly ploughed land will with it.

Now, if we find that this machine, as I predict it will, can do the work of the man with a fork, rapidly and easily, the grand desideratum has been reached, and for much of the work of the farm the plough is doomed, but not, as Mr. Meehi thinks, for all.

## BENEFIT OF DITCHING.

About one year ago, I bought 120 acres of land, for \$400. There was at least \$350 worth of improvement on it. The reason I bought it so cheap was, it was so wet that the former owner could not make a living on it. He told the neighbors that it was too wet to raise grass. He said if he would sow clean timothy seed on it, in two years it would turn to wild grass. Well, last spring I went to work and cut a ditch large enough to drain it decently. Some of the time I worked in the water to the top of my boots, and that not a little of the time, for I cut the ditch in the lowest of the ground. The consequence was, the water had a chance to run off, and my ground

was fit to plough about as soon as my neighbors' *dry land*. I planted six acres of corn, on the part I ditched; and from that six acres, I took off 400 bushels of shelled corn that was *good and sound*. This proves to my satisfaction that our low, wet lands, when well ditched, are our *best* lands. I would say to one and all of those for whose benefit I write, hold up your heads: "For in due season you shall reap, if you faint not"—in ditching. Do not back out at the noise of a few frogs; just go to work and dig a good ditch, and drain the water off from them, and they will soon be missing. LUTHER BROWN.

#### DAMSON CHEESE.

However much we may advocate fruit culture in our pages, we leave the cooking department to others; but there is no general rule without an exception. There are many ways to do many things, but there is only one way to make *good* Damson Cheese. Whence it took the name of cheese, we know not, unless it be from its firm, cheese-like texture, when well made—which it will be if the following recipe is adhered to:—

Put the Damsons in a stone jar, which place in an oven or on a stove until the juice runs freely, the fruit is perfectly tender, and the stone separate from it. Remove the stones with a silver or wooden spoon; measure the pulp in a preserving pan, and place it on the fire and boil, until the liquid is evaporated, and the fruit left dry. Whilst this is doing, have ready a quantity of white loaf sugar, allowing half a pound of sugar for every quart of pulp, *as measured when put into the pan*. Let this sugar be rolled fine, and then heated in the oven in a pan until it is so hot that the hand cannot be kept on it. In this hot state, mix the sugar *thoroughly* with the dry pulp, also hot from the fire. It will become very firm, and does not require to go on the fire again. Put it into jars or glasses whilst hot, and when cold, cover and put away.—*Horticulturist*.

#### CHEAP AND EFFICIENT MODE OF SAVING APPLES.

MR. EDITOR,—I send you a description of a *new* and interesting method of saving winter apples, which a neighbor, Mr. Amos Chambers, has found out and practised for three seasons with success. It consists in making a large box of inch boards, sufficient to hold several waggon loads, which is lined up with the same material, and nailed to two-inch scantling, leaving that space between the outside and the inside; the bottom is made of lattices; and the whole rests on the ground upon four-inch scantling. The winter apples are carefully gathered and put into this box, which is placed near the middle of the orchard, in the shade of an apple tree. The top of the box is covered over with boards in the same manner as the sides, with two thicknesses, leaving a space between them—the top of course made waterproof to exclude the rain. It is left

in this manner until just before the commencement of hard frost that would be liable to freeze the apples; the box is then banked up with earth, a few inches around the bottom, to exclude the air from going under it, the casing of two inches around the box is filled with dry loam or any kind of dry earth, and the top under the roof is also covered to the depth of an inch or two with earth, which effectually excludes the air from the apples; they then freeze up solid, and no rotting takes place, and will be found in excellent condition in the spring; and it is rather surprising that the flavor is not in the least injured. The air is left to circulate freely through the latticed bottom—the cover being left on loose, so as only to shed the rain. An opening with a lock-up shutter may be made near the top of the box, for the convenience of taking out apples at any time.

The above plan makes it an easy matter to house the apples without removing them from the orchard. Now, I would propose from the above data, that fruitgrowers erect a neat and ornamental building in their orchard, or in some convenient place, to be built on the same principle, to be lined up in a similar manner, and the casing filled with earth, or any substance that will exclude air, and act as a partial non-conductor of heat, with means for ventilating in the fall.

From some cause, there are very few cellars that will preserve apples or other fruit during a Canadian winter. Having tasted of the apples alluded to, I can bear evidence that they have preserved the finest flavor, and have been kept to the date I am now writing. There is a difficulty, in other methods, in keeping the temperature at a certain point in this changeable climate, which would be otherwise necessary for apples.

Yours respectfully,

T. G. WILSON.

Ontario, Saltfleet, C. W., May 16th, 1854.

#### TEETH OF ANIMALS.

The following remarks are taken from the Transactions of the Royal Society, and may be read with interest:—

Professor Simonds, the Veterinary Inspector of the Society, proceeded to deliver the first part of his Lecture on the Indications of Age, furnished by the structure of the teeth and the general developments of growth in cattle, sheep, and pigs. On this occasion, he confined himself to the indications furnished by cattle, reserving for his second lecture the consideration of those connected with sheep and pigs. The discussion of the various points brought forward was of the highest interest in a scientific and practical point of view, and their elucidation strikingly promoted by the lecturer's continual reference to a great number of colored diagrams on a large scale. He particularly alluded to two of the results of his own investigations on the structure of the teeth, as being, he believed, perfectly new to physiologists.



1. After describing the dentine enamel and crusta petrosa as the constituents of the teeth, and also explaining the so-called osteo-dentine, he remarked that the latter substance did not fill the pulp-cavity in an old tooth of any of the domestic Herbivora. The obliteration of this cavity is effected by the pulp continuing to form dentine, and not by its ossification or conversion into osteo-dentine, as stated by writers on the structure of the teeth.

2. In proportion as the pulp diminished, so was the supply of nutrition to the tooth cut off from the inside, and, to provide for this, the dental tubes in the fang became changed into bone-cells, or, in other words, the crusta increased at the expense of the dentine, and thus the tooth drew its nourishment from the blood sent to the sockets in which the teeth are embedded.

In reply to a question by Sir John Johnstone, Professor Simonds had no doubt that the teeth of horses would, to a certain degree, be affected by the same general forcing system; but, at that time, no data connected with that point had been collected, and he was consequently unable to give more than a general opinion of the probable result of the adoption of such a course in the case of the horse.

#### HOLLOW HORN DISEASE.

A writer in the *Boston Cultivator* gives the following as the symptoms of, and remedy for, the hollow horn disease:—"The symptoms are dropping of the head and ears, lying down, turning the head over the back, towards the shoulders, as if pain in the head. This I think is a spinal disease, affecting the brains and horns. Cure—Take a large table spoonful of sulphur, and lard sufficient when warm to make it soft like paste, pour it on the top of the head at the root of the horns; take a shovel or flat piece of iron, heat it, and hold it over the head so as to heat the paste and warm the top of the head, as much as the beast will bear; repeat once in two or three days, and bore the horns on the under side, two or three inches from the head, so as to let in fresh air, and let the putrid matter out, if any be collected. I have never known this to fail, if taken before too far gone. I have cured one cow when the top of the head was so full of matter that I opened a place above the ear, which discharged more than a half pint. This was in the summer; the cow was fattened in the fall and killed; the head was all right, excepting a place at the roots of the horns, about as large as a small spoon bowl."

#### HORSE BREAKING FOR HARNESS.

Before the horse is attached to any vehicle, the harness should be allowed to remain on him in the stable several hours during two or three consecutive days; he should be led out so that he may become thoroughly accustomed to the trappings, and a cord six or seven feet in length should be fastened to each trace. With this the

horse is quietly led about, one man performing that duty, while another follows, holding the aforesaid cords, which, as the animal moves forward, are to be strained, so that he feels a slight pressure of the collar upon his shoulders. The intention of this treatment must be obvious; if the horse is alarmed by the effect of the collar, the man holding the cords which are affixed to the traces can instantly relax them; and again when he finds his pupil is reconciled, he may renew a moderate strain, and, finally, as much resistance as he has power to create. By this means the most timid horse will gain confidence, and, by perseverance, the most refractory may be overcome. A horse when first encumbered with harness, if immediately attached to a vehicle, is astonished when required to move, at finding a pressure on his shoulders which he had never before experienced. He discovers another novel apparatus for confinement, he is in fact trammelled, and endeavors to escape;—probably he plunges, kicks, or rears, and becomes difficult to manage; but by the simple process just recommended all that is obviated.—*Hints on Training.*

#### UNITED STATES NATIONAL CATTLE SHOW.

This much-talked-of affair came off at Springfield, Ohio, on the 25th, 26th and 27th of Oct. The weather was delightfully fine, and the attendance of visitors large. The amount of cattle was not so great as might have been expected, but the Durham class was numerous, and their quality never before equalled, as all accounts testify, at any Agricultural Show on this continent. We regret that no Canadian cattle were present, as we are assured by competent authorities, that we have stock, particularly Devons and Ayrshires, that would most certainly have taken premiums. The risk and expense, however, of transporting valuable animals to long distances, will always keep back a large number of the choicest specimens. We observe that Mr. Parsons, of Guelph, and Mr. Askew, of Windsor, were present, and took part in the proceedings of the Show. The subjoined list of the premiums awarded is from an exchange paper:—

The third and last day [Oct. 27] of the National Cattle Show, opened at 9 o'clock with the exhibition of stock for the sweepstakes premium of \$500. For this premium there were five entries of one bull and five cows each. The competitors are Brutus J. Clay, of Kentucky, Solomon Meredith, of Indiana, Jacob Pierce, Wm. Pierce and Arthur Watts, of Ohio. Never before has so splendid a display of thorough-bred cattle been shown on the American continent.

The awards were made to Durham bulls of three years old and upward, as follows:—

First premium of \$300, to "Perfection," bred by Jeremiah Duncan, and owned by Edwin G. Bedford, both of Paris, Ky.; second premium of \$200, to "Sheffield," owned by J. W. Robinson, of Madison county, Ohio; third premium of \$100, to "Belmont," owned by Caldwell & Co., of Fayette county, Indiana.

To two-year olds as follows: First premium, \$200, to "Locomotive," owned by Brutus J. Clay, of Paris, Ky.; second premium, \$150, to "Colonel," owned by R. G. Dun & Co., of Madison county, Indiana; third premium, to "Lafayette," owned by J. M. Sherwood, of Auburn, New York.

To Yearlings—First premium, \$150, to "New-Year's Day," owned by Charles M. Clark, of Springfield, Ohio; second premium, \$10, to "King Cyrus," owned by Geo. M. Bedford, of Paris, Ky.

**Durham Cows and Heifers**—Three years old and upward—First premium, \$200, to "Lady Stanhope," owned by Brutus J. Clay, of Paris, Ky.; second premium, \$150, to "Duchess," owned by William Palmer, of Fayette county, Ohio; third premium, to "Clara Fisher," owned by S. Meredith, of Cambridge, Indiana.

Two years old—First premium, \$150, to "Fashion," J. Stedden, Warren county, Ohio; second premium, \$100, to "Laura," Brutus J. Clay, Paris, Ky.; third premium, \$50, to "Mary Clay," S. Meredith, Cambridge.

Yearlings—First premium, \$100, to "Lowan," Jeremiah Duncan, Paris, Ky.; second premium, \$75, to "Easter Day," Charles L. Clarke, Springfield, Ohio.

**Devon Bulls**—Three year olds, first premium, \$100, to "Know-Nothing," owned by N. W. Smith, of Warren county, Ohio; second premium, \$75, to "Herod," owned by L. G. Collins, of Montgomery county, Indiana.

Two year olds, first premium, \$30, to "Moulton," owned by L. F. Allen, Buffalo, N. Y.; second premium, \$20, to "Jake," owned by E. Merritt, Clarke county, Ohio.

Yearlings—First premium, to "Premium," owned by L. G. Collins, of Montgomery county, Indiana.

**Devon Cows**—Three year olds, first premium, \$100, to "Sapplee," owned by L. F. Allen, of Buffalo, N. Y.; second premium, \$75, to "Frances," owned by L. G. Collins, of Montgomery county, Indiana.

Two year olds, first premium, \$75, to "Dolley," E. M. Merriweather, Todd county, Ohio; second premium to "Devon," N. W. Smith, Warren county, Ohio.

A yearling heifer of L. G. Collins was commended.

**Hereford Bulls**—Three year olds, first premium, \$100, to "Curly," Thomas Aston, Elyria, Ohio.

Two year olds, first premium, \$50, to "Mystery," W. H. Sotham, Liv. county, N. Y.

One year olds—First premium, \$70, to "Defiance," Thomas Aston, Elyria, Ohio.

**Hereford Cows**—Three year olds—First pre-

mium, \$100, to "Bolbayle," W. H. Sotham, Liv. county, N. Y.; second, \$75, to "Duchess," Thos. Aston, Elyria, Ohio.

Two year olds—First premium, \$70, W. H. Sotham.

**Ayrshire Bulls**—Three year olds—First premium, \$100, to "Dandy," P. Melendy, Hamilton county, Ohio.

Two year olds—\$80 to "Wallace," T. W. Barber, New Paris, Ohio.

One year olds—\$75 to "Ducas," P. Melendy.

**Ayrshire Cows**—Three year olds—First premium, \$100, to "Lassie," P. Melendy.

Two year olds—First premium, \$75, to "Alice," P. Melendy.

**Jersey Bulls**—Three year olds—First premium, \$100, to "Pat. Smith," R. L. Colt, Pater-son, N. J.

**Cows**—First premium, \$100, to "Dun," by the same; two years old, first premium, \$75, to "Jersey," by the same; one year old, first premium, \$60, to "Patty," by the same.

**Miscellaneous**—First premium for working oxen, \$50, C. Fullington, Union county, Ohio; second premium, fat ox, \$50, B. Stedman, Cleveland, Ohio; third premium, fat cow, \$50, J. W. Ware, Fayette county, Ky.; fourth premium, milk cow, \$50, J. W. Brock, N. Petersburg, Ohio; fifth premium, \$50, steer, J. W. Ware; sixth premium, \$50, Bull Calf, W. D. Pierce, Clark county, O.; seventh premium, heifer calf, W. W. Thrasher, Fayette county, Ky.

The Committee on Sweepstakes, being a premium of \$500 for the best herd, of a bull and five cows, or heifers, of any breed, were unable to agree, after a thorough examination and full deliberation. The attendance has not been as large as could have been desired. On the second day the number present might have reached 15,000, and there was not as large an attendance on the other two days.

The following remarks on the Durham class, which infinitely distanced all the others put together, are taken from the *American Agriculturist*; they are from the pen of L. F. ALLEN, Esq., who was one of the judges on *Sweepstakes*, at this Exhibition:—

**THE SHORT HORNS.**—If we were to give loose to our feelings while attempting to write of the grand and imposing array that was before us in this matchless class of cattle, our pen would involuntarily fall from our fingers, and we might, perchance, for once in our life, grow eloquent in speech. The number of these on the ground was upwards of a hundred; and they chiefly the pick of the best in Ohio, Kentucky and Indiana, from the native breed as well as the recently imported animals of the kind. Some of the highest-priced bulls, however, were absent, not being now in show condition. Of this class, first in the field, in point of time, were those of Brutus J. Clay, the two Messrs. Duncan, and the two brothers Bedford, of Bourbon county, Ky. They brought in a herd of fifteen cows and bulls. It might be invidious to speak of these fine speci-



mens to the omission of others; but we can truly say, that as they were a selection from the best of Kentucky's prize cattle, they were, combined, a paragon of beauty and excellence. Some of them had taken half a score of first prizes, in their different ages and classes, at home. Their condition for high show was first-rate—not a thing lacking that could add attraction to their qualities. Next to these, out of Ohio, was the fine herd of Col. Solomon Meredith, of Wayne county, Indiana—half a dozen in number, most of them Kentucky bred, with an imported one or two for comparison. Then came the beautiful herds of Dr. Arthur Watts, of Chillicothe, the brothers W. D. and Jacob Pierce, and Mr. Waddle, of Clark county, and many other breeders, smaller in number, but equally meritorious in the quality of their stock. Among them were the Hadleys, the Dunns, Clarks, Steddoms Palmers, and others, of Ohio; together with Caldwell, Thrasher, and Davidson, of Indiana, and Ware, of Kentucky. Col. Sherwood, of Auburn, N. Y., also contributed a fine bull—La Fayette—which drew a prize in his class. Mr. Pendergrast, of Chatanque Co., Y., also exhibited a fine imported bull, and a capital large milking Short-horn cow. We cannot well particularize, where there was so large an array of excellence; but can freely say that, in any and in all the shows we have before witnessed—and they are of the largest and best ever made in the United States—we never saw so difficult a place to select the best, as among the Short-horns got together at Springfield.

But the great contest of the occasion—the hopes, and fears, and aspirations, of the several candidates for victory was the sweepstakes, consisting of a single bull and five cows belonging to any one herd. In this class there were six entries, viz.: Brutus J. Clay, of Kentucky; Solomon Meredith, of Indiana; Arthur Watts, A. Waddle, W. D. Pierce, and Jacob Pierce, of Ohio. As Mr. Waddle's stock was but recently imported, and hardly yet upon their legs from a long sea voyage, he withdrew them from competition, and we did not see them on the ground. Of the herds exhibited, those belonging to the two Messrs. Pierce were in low condition, from the dry season, and although containing several excellent animals, and of great promise, particularly among the young imported heifers, the committee, so far as I could learn, mainly selected for discussion the herds of Mr. Clay, Doctor Watts, and Mr. Meredith. It is no more than justice to say of these, that fifteen finer cows can scarcely, in the aggregate, be found together; and adding a selection from those of the Pierce's imported ones, a score, that even England may be challenged to excel—so ripe were their points, so perfect their condition, and so well selected for an imposing exhibition. Arranged as they were, in a line, each herd headed by their bull, it was the most splendid array of cattle we ever witnessed; and it is not strange that, after a very minute examination of several hours, and two further hours of consultation and trial, the committee of eight, to whom they were referred, should disagree upon the comparative merits, and come to no decision.

This was the fact, and the great trial of superiority of any one herd over another, in a matched competition of Short-horns, has yet to be settled! The pride of three States was enlisted in this, and no one achieved a victory over the other. Each competitor had a right to feel proud of his herd, and gratified that if he had not the best, no one, in the opinion of the public, had a better than his own. Upon a report of the committee to the Society, that they could not agree, they were discharged from further duty.

#### CANADIAN PROGRESS—THE TOWNSHIP OF BLENNHEIM.

We have occasionally copied from the local press the most pleasing and conclusive testimony of the sound and rapid progress which Canada is making in all the substantial attributes of national prosperity and greatness. The following description, taken from the *Ayr Observer*, a recently established and well conducted paper, will apply in spirit to a large number of other townships that have lately come under our own personal observation:—

“This township is about twelve miles long and nine wide. The soil is exceedingly fertile, and the roads are generally good. It is settled principally by Scotch, English, and Dutch, intermixed with a few Novascotians. There was once a time in the history of this township when the inhabitants were exceedingly poor, and some of our old residents can recollect when it used to be common to denominate pine shingles ‘Blenheim Wheat,’ they being at that time the staple production of the township. But those days are passed and gone forever. Blenheim is now, perhaps, one of the first townships in the province, as far as the products, the industry, the intelligence, and the wealth of its inhabitants are concerned. A person travelling through it now will be struck with the appearance of the farms—the houses are neat and comfortable, the barns are extensive, and what is far better, they are well filled. Schools are numerous, and generally well attended. The township has progressed very rapidly during the last eight or ten years, and many a stalwart arm has been engaged in felling to the ground the monarchs of the forest. All the land is taken up; and it can be said of this, which cannot be said of every township that three-fourths of the settlers have clear deeds of their farms. They are exceedingly industrious, and Providence seems to smile on them, as they are generally blessed with an abundant harvest. In the south part there are many excellent old orchards, and in the north there are some old ones, but young and vigorous trees have been planted out by most of the farmers, and ere many years they will be laden with the delicacies of this life. The stock is rapidly improving, and the best breeds are now being introduced by many of the farmers. The township is not deficient in water-power, the river Nith running through a portion of it, and on which are erected not a few

Gristmills and Sawmills, and there are many sites not yet brought into use. The Buffalo, Brantford & Goderich Railroad runs through the township, and there are to be depots at Drumbo and Cheserfield. Numerous villages are springing up and progressing very rapidly, among which may be mentioned Canning, Drumbo, Chesterfield, Washington, Richwood, and Platts-ville.

"This township stands A 1, in the intelligence of its inhabitants. They are all great readers; and, as a proof of this, we may mention that it is not uncommon for the farmers to take three or four newspapers; and, in consequence of this, their children are generally well informed.

"The religious character of the people deserves a special notice at our hands. They are a church-going people in every sense of the term, and their attendance at church is not merely a form, but it has proved a benefit, as can be seen by their every-day deportment, and the discipline of their families. We have not, as yet, lived long in the village of Ayr, but have been astonished at the number of country people, from this and other adjacent townships, that attend our churches on the Sabbath Day. They come to our village in families; and it is, to us, a pleasing sight to see so many hale and hearty old farmers, with their sons and daughters, clustering around them, attending to the 'one thing needful,' while the Almighty is blessing them with all that is necessary for their temporal comfort and well-being."

## Editorial, &c.

G. BUCKLAND, ESQ., EDITOR.

H. THOMSON, ESQ., ASSISTANT EDITOR.

### THE AGRICULTURIST—VOL. 7.

The present number completes the sixth volume, of the *Agriculturist*. It is probably more thoroughly *Canadian* than any of its predecessors. The numerous Farmers Clubs that have been organized in various parts of the country, and the interesting, practical, and most useful discussions which have taken place at their meetings, have enabled us to lay before our readers a kind of matter we had long sought to obtain, but with only partial success until the present year. Those who object to "book-farming" and want *practical* information will find it in the present volume, and we trust in future volumes also, upon nearly every important branch of Canadian Agriculture. The reports of these discussions bring out the fact,—which we had never doubted,—that among our practical farmers there are many who not only

understand their business, but can explain it to others by speech, or writing quite as intelligibly as those of any other country. These "discussions" have attracted attention in England, and the United States, as well as Canada, and have contributed in no small degree to create a favorable impression of our country, and its Agriculture. But it is most gratifying to us to know, that the facts, opinions, and suggestions made public by means of these Clubs have been highly appreciated at *home*, and have excited emulation in many neighbourhoods which has resulted in the establishment of similar clubs. We have every confidence that these meetings and discussions will increase in number and improve in character, and we intend that the "reports" of their proceedings shall continue to form the *practical* department of our journal.

Our "correspondence," though not as extensive as we had hoped it might be, has been of a solid and useful character. The topics discussed at the meetings of Farmer's Clubs, the personal experiences there detailed, have in some measure supplied the deficiency of local information, which we had expected from our correspondents. We trust nevertheless that any subscriber who wishes to obtain information on any point or who thinks he can contribute anything useful to his brother-farmers will not hesitate to communicate with us. We cannot promise to publish everything that may be sent, but shall deal liberally with all.

While we have not attempted mere flashy display in the illustration of our paper, we have endeavoured to furnish cuts when really needed. The important subject of CATTLE, has been very thoroughly treated in the present volume. Besides miscellaneous notices, essays, &c., we have given our readers the substance of Youatt and Martin's work on "The Ox," with wood-cut engravings of the several breeds. The book itself, the most valuable part of which we have thus extracted and reprinted, is sold at 6s. 3d. while the subscriber to the *Agriculturist* has been supplied with the information it contains, with a large amount of additional matter for the small sum of 2s. 6d. if a Club or Society subscriber, and for 5s. if taking it individually. The



"diseases" of cattle will be treated of in our next volume, and probably, the history of the Horse, different breeds, &c. collected from the most authentic sources.

Authentic reports of the proceedings of the Board of Agriculture, Provincial Association, Prize List, &c., &c., appear in the *Agriculturist* only. Without being an official journal, or the responsible *organ* of any Society or Board, it contains everything relating to our Agricultural institutions,—now well organized, and becoming every year more active and useful,—that the general reader is interested in knowing.

To Agricultural Societies this journal is of great importance. Besides the interest it awakens among their members, and the information imparted on general topics, the explanations, notices and suggestions in reference to their organization, management, rights and duties under the law, which from time to time appear in its columns, must give it precedence over any other journal, especially those coming from a foreign country.

The next volume will be improved in some respects, especially in the style of printing, and, if possible, in *paper*. We wish to encourage "home production," and are therefore obliged to use an article that does not *look* so well as it might, though it is really stronger and wears better than imported paper of similar material. We have been promised improvement in color and finish, and hope we may not be disappointed. The Editorial staff will probably undergo some change, though Professor BUCKLAND will continue to give his aid in the Agricultural Department. We intend to merit, and hope to receive a continuance of that patronage which the *Agriculturist* has already enjoyed. It is the only *bona fide* Agricultural journal published in Upper Canada; and having contributed largely to the establishment of the present excellent organization of Associations, Boards, Societies, &c., it surely deserves their countenance and support. We notice that another attempt is being made to palm off upon our farmers an American paper, with probably a page or two added, under the name of the "Canada Farmer." We have no objection to

see American Agricultural journals in the hands of our farmers,—in fact we should be glad to hear that the best of them were more generally read—but the attempt to introduce them under a *false name*, is a sort of "Yankee trick" that we cannot admire. This is not fair competition, and will not be countenanced by those who love truth and hate deception.

The terms of the *Agriculturist* will be the same as usual, although the cost of publishing has increased 20 per cent. during the last year. The January number will be sent to all present *single* subscribers, and a few copies to the Secretary of each Society or Club now taking it. Orders should be sent in as soon as possible.

#### PROPOSED AMENDMENTS OF THE AGRICULTURAL ACT.

We have received the copy of a Bill introduced by Mr. Felton, member for Sherbrooke, Lower Canada, to "amend" the Act "establishing a Bureau of Agriculture," &c. We are quite ready to admit that the Act in question could be amended in several points, but we must say that the proposed Bill of Mr. Felton, who, we believe, is a lawyer by profession, will prove the very reverse. It may be that the Lower Canada Board of Agriculture, or some member of it, has suggested the so-called "amendments" of Mr. Felton, but we think before the *machinery* of so important an Act is interfered with, the Board of Upper Canada, or some of those acquainted with, and interested in the practical working of agricultural institutions in this section of the Province, should have been consulted. The agricultural *system*, as it may now be called, has been in operation in Upper Canada for some years,—at least the most important parts of it. Experience pointed out the necessity for the "amendments" that were embodied in the consolidated Act of 1852. The organization of a "Board of Agriculture," and an "Association" connected with it, was a *new* thing in Lower Canada. They have held but two shows under the new system, and can hardly claim to understand it better than those who framed the law, and have had a longer experience of its provisions.

We have not space to comment fully upon the bearing and effect of the proposed "amendments." It might be sufficient to say that nothing has occurred in this part of the Province to warrant them. If the Bill were confined to Lower Canada, and the friends of Agriculture there are satisfied with it, we could not object; but we protest against any tinkering of the Agricultural Act, so far as Upper Canada is concerned, without at least an expression of opinion, a petition, or a hint, from some Society, Board, or Association of Upper Canada. The chief imperfections in the present Act, are the very "amendments" introduced by parties who had not studied the measure, while it was passing through the Legislature. We are not therefore much in favor of hasty or ill-considered attempts to *amend* a system, until it is proved faulty, and until those who are interested in, or well acquainted with its practical operation, approve of the proposed remedy.

We may mention that one of Mr. Felton's "amendments" is, to place the election of the members of the Board of Agriculture in the hands of the President and Vice-president (he does not seem to know that there are *two* Vice-presidents) of each County Society, or two deputies in their stead. At present the County Society at its annual meeting is authorized to make the election. Why the constituency of the Board should be thus narrowed, and its influence and status correspondingly lowered, we cannot learn. Another "amendment" is, to compel the election to be made on the last day of the annual meeting of the Provincial Association. The experience of several years has clearly proved in Upper Canada, that the occasion of the Exhibition is the worst possible time to transact any business apart from the show itself. Another amendment is, to make the Board (and not the Directors of the Association as at present) appoint the place for holding the next show, &c. This duty was, for very good reasons, cast upon the Directors of the Association, who are composed of representatives from each County Society, including the members of the Board. Jealousy and ill-will are thus, in a great measure, prevented. All parts of the country are fairly represented, and

no one can complain of the decision. The Bill is loosely drawn, and will introduce doubt and confusion instead of improvement. We hope it will receive a "six months' hoist," or be limited in its operation to Lower Canada.

#### PARIS WORLD'S EXHIBITION OF 1855.

The Executive Committee of the Provincial Commission appointed to ensure a fitting representation of the industry and resources of Canada at the World's Exhibition to be held in Paris in the year 1855, have published a report recommending the course to be adopted throughout the Province. They propose that local committees should be formed in the chief towns of each County in either section of the Province, to consist of all members of the commission lately appointed by Government, all members of both branches of the Legislature, all Wardens, Mayors and Reeves, Professors of Colleges, Presidents and Secretaries of Agricultural Societies, and Presidents of Mechanics' Institutes and other scientific bodies. They also propose that Central Local Committees, to be organized in a different manner, shall be formed at Montreal and Toronto respectively, whose duty it shall be, in connection with the Local Committees, and the Executive Committee, to take active measures to ensure the best possible representation. Appended to the report is the proposed classification under which articles shall be forwarded. The classification adopted is the same as at the London Exhibition in 1851. The following is the conclusion of the Executive Committee's Report:—

To assist the public as much as possible in the meantime, the Committee propose appending to this report a concise table shewing the classification adopted at the London Exhibition, and the awards of the Council Medals, also the names of Canadians who obtained Medals or "Honorable Mention." A more detailed list may be given hereafter, but the Committee are anxious that as little delay as possible should take place in developing their scheme to the public.

The Committee being of opinion that voluntary effort is not to be relied on, have obtained the sanction of the Commissioners to the principle of paying for all articles sent to the Paris Exhibition, but at the same time they propose that the contributors should receive all prizes or honors which may be awarded to the articles sent by



them. The great difficulty in carrying out the plan of purchasing is to avoid partiality, and the Committee have anxiously considered this point, and have determined to recommend:

1. That all who have received prizes or honorable mention at the London Exhibition in 1851, or the New York Exhibition of 1853, and all who have received first prizes at either of the Provincial Exhibitions of Upper and Lower Canada in 1853 and 1854, should be invited to send propositions to the Local Committees stating whether they will send specimens of their products and manufactures for exhibition to Montreal or Toronto, on or before 1st February next, payment to be made for such articles at the fair wholesale market value to be decided in case of dispute by the Judges at the Local Exhibition.

2. The Local Committee may further recommend for consideration a proposition from any party who has received a first prize at any Local Exhibition, which shall be referred to the Sub-Committee of the Executive Committee charged with that branch of industry.

3. In case of failure to obtain contributions from the above classes or under special circumstances, the Sub-Committee may take such steps as they may think best to ensure a proper representation of their particular branch. By these means it is hoped that public confidence will be inspired in the impartiality of the Committee. But it is proposed to go further. The whole public are invited to compete at the Local Exhibitions, at Montreal and Toronto, and any successful competitor will have his contribution purchased on the same terms as those furnished by the classes already described. The Executive Committee do not bind themselves to send to the Paris Exhibition any of the articles which they engage to purchase. They must be guided by circumstances, such as the extent of the contribution, the quantity of space allotted, &c., &c. The articles not sent will of course be resold on account of the commission. The propositions made by the parties entitled to furnish articles under the above regulations must be as specific as possible, and must be forwarded at once to the Secretary, so that the proper Sub-Committee may dispose of them. It will be advisable to prevent as much as possible similar articles being made by different manufacturers and mechanics. It is hoped that no delay will now take place, and that the Local Committees will be active in obtaining and promptly procuring the propositions of intended contributors. It is recommended that all the contributions be sent to Montreal or Toronto, where they will be delivered free of expense to the Central Committee at each place, and exhibited to the public at a small admission price. Jurors will be appointed to aid the Committee in determining on the articles to be sent to Paris, but no prizes will be awarded. Such is the scheme which the Executive Committee are of opinion will, if zealously supported by the local Committees and the public, ensure for Canada an honorable position at the great Paris Exhibition.

F. HINCKS, *Chairman.*

J. C. TACHE, *Secretary.*

Acting upon the recommendations in the Report, we learn that Local Committees have already been organized in several places. At Montreal, the Local Committee is in vigorous operation, meeting twice a-week, and using all possible dispatch in procuring specimens. At Toronto, we regret to say, a good deal of time has already been lost. However, a preliminary meeting was held at the office of the Board of Agriculture on the 1st instant, for the purpose of organizing a Local Committee. Although the meeting was thinly attended, nearly all the resident members of the Commission were present. E. W. Thomson, Esq., was appointed Chairman, and G. W. Allan, Esq., Secretary and Treasurer. It was decided to call another meeting of the Local Committee on Saturday, 9th instant, to be held in the County Council Chamber, Shire Hall. With the view of ensuring a full attendance, the Secretary was requested to advertise the meeting fully, and also send Circulars to all the parties above named who are ex-officio members of the Local Committee. It is to be hoped that when this meeting takes place, some well-arranged method of action will be decided upon. It is necessary to proceed to work, with all possible activity, or the time will pass away before anything worthy of this part of the Province has been done.

#### AGRICULTURAL SOCIETIES.

The Agricultural Societies of Upper Canada are not only increasing every year in number, but also, generally speaking, in systematic activity and usefulness. Much of our agricultural improvement and prosperity is no doubt to be traced, more or less directly, to these invaluable organizations, which are richly deserving the best sympathies and support of a discerning and patriotic public. Nevertheless, there is much that is yet defective in the working of these institutions, and we are far short of practically realizing what is evidently the leading and characteristic principle of the present Agricultural Statute, viz., the systematic and harmonious action of the different classes of Societies, organized in accordance with its provisions for the

diffusion of agricultural knowledge, and the improvement of agricultural practice.

We have much pleasure in calling the attention of our readers to some excellent remarks made by George Alexander, Esq., at a recent meeting of the West Zorra Agricultural Society, Mr. Alexander is the President of the County of Oxford Society, and seems to regard it as a part of his official duty to attend the various Township Exhibitions in his own county; thus setting, as we think, an example which all county presidents might beneficially follow. The toast of the County Society having been cordially received, Mr. Alexander observed:—

“He felt deeply sensible of the honor which had just been conferred upon him, and would observe that if it was his duty to be present at the exhibitions of the different Branch Societies, it was a very pleasant duty to discharge. He proceeded to observe, that they had now outlived the discouraging times, when the farmers got little for any kind of farm produce. He would not look back to them, as we had now before us a bright and promising future. The forests were rapidly being transformed into beautiful farms; property everywhere had increased immensely in value; and while all other improvements were steadily progressing, it was gratifying to observe the farmers keeping pace with the times. Their highly esteemed President, Mr. Oliver, who acted as one of the judges of sheep, at the late Provincial Show, would tell them of the magnificent stock of every description exhibited there. It must be admitted, he said, that those annual exhibitions have had the desired effect of calling forth a noble emulation to import into the Province and raise the finest bred stock; while our county and township societies are diffusing widely this spirit of improvement. He would observe, that from the very successful working of the township societies generally, it had been found somewhat difficult to extend the sphere of the county society to what it should be. However, every one must rejoice to see the township societies doing so much good; and it would be unwise to attempt to divert from their natural channel the energy and enterprise which have been awakened in such localities, unless it became generally the spontaneous wish to unite in forming one grand society. As the country progresses, and many of the settlers get superior improved stock, they will naturally desire to exhibit them in a larger sphere; and there is no reason why the county society being sustained, if it is possessed with proper energy and judgment. It has a beautiful show ground, granted by the Government, which has been handsomely fenced in and is now being levelled by some of the best sheep raising members. Sixty permanent pens of sheep are now just being finished, the expense will be defrayed, principally, by Woodstock. From the inhabitants of

Under the Statute, it receives annually ninety pounds of the government grant; while the present year, the number of its members has been more than doubled, and many others have expressed their intention to compete at the next annual exhibition, so that the prospects of the society are rather looking up; but he wished to say a few words on another subject. He would like to see the farmers of West Zorra and other townships meeting in this social manner more frequently, to talk over many of those matters, in which they have a common interest. By taking part in such meetings, we all become more liberal and enlightened in our views and feelings, and acquire an interest in many things, which it is beneficial for us to know. While all seem to be acquiring property, it is indispensable that we progress in intelligence as a people. The mere possession of wealth does not give respectability or dignity to man. We find that Scotland has been distinguished for the excellent working of her Parish Schools, and for the love of knowledge generally prevailing amongst the youth of that land, which has fitted them for the discharge of all their duties in life, and which has enabled them to rise to the highest positions in the state. He regretted much to be informed, that this noble township had not yet established its public Library. East Zorra had done so, and with all the inducements now held forth by the Education office, it was desirable that every township in the land should follow their example. Before concluding, he claimed permission to propose a toast. He said, he had been much delighted with what he had seen this day. It was gratifying to observe the great improvement upon last year in the different stock exhibited. Their township was in a highly prosperous state.”

Mr. Alexander, in proposing the health of the Successful Competitors, remarked:—

“That if there was any body of men to whom the country was more deeply indebted, it was to those gentlemen who were devoting themselves to the improvement of stock, and he hoped to see many of those, who had taken prizes here this day, exhibiting at the next annual show of the County Society. It appears to have been the idea contemplated by the Statute, that the successful competitors at the different township shows, should then compete at the County Exhibition. He hoped to see a laudable emulation amongst the different townships as to which would carry off the greatest number of prizes. If the County Society could be extended to occupy this its proper position, it would be rendering some service to the country.”

#### ANNUAL MEETINGS OF SOCIETIES.

It may not be amiss to remind such of our readers as are placed on the management of these institutions, that the Statute requires all Township Societies to hold their annual meetings, for the adoption of Reports, electing Officers, &c., sometime during the month of



*January* in each year; and that a perfect and certified copy of such Reports be sent to the Secretary of the *County Society*, previous to the annual meeting thereof, which the law directs to be held in *February*. The Secretaries of County Societies are required to transmit their own Reports, with those of their respective Townships, to the *Board of Agriculture in Toronto, on, or before, the 1st day of April*. Some of these documents have on previous occasions been sent to the Bureau of Agriculture at Quebec, thereby occasioning both inconvenience and delay.

We understand that a plan for publishing all that is interesting and valuable in the Reports of Societies, together with those of the Provincial Association, Prize Essays, &c., will be submitted to the next meeting of the Board of Agriculture, and that there is every probability of its being carried into execution. Societies will therefore consult their own usefulness and character by making their Reports as full, systematic, and interesting, as possible.

#### UNIVERSITY OF TORONTO.

The annual commencement of this Institution took place on Friday, November 24th, in the capacious Hall of the Legislative Council, which was filled to overflowing. Mr. Chancellor Blake presided. A large number of students matriculated, and academic degrees were conferred. The occasion was highly interesting, and the addresses of the Chancellor and the various Professors were excellent. The learned and esteemed President, Rev. Dr. McCaul, was, as usual, eloquent, happy, and impressive. A number of premiums, consisting of medals and books, were given; among them may be mentioned two in the Agricultural department. The first, offered by Wm. Matthie, Esq., of Brockville, the late President of the Agricultural Association of Upper Canada, was won by Mr. J. E. Sanderson; the other, given by a member of the Board of Agriculture, was awarded to Mr. W. W. Baldwin, son of the Hon. Robert Baldwin. Professor Buckland, in presenting these prizes, paid a well-merited compliment to Mr. Matthie, and spoke highly

of the industry and attainments of the successful candidates, who had not won their honors without a close competition.

By the way, we may observe, that the Senate have established five Scholarships in Agriculture, of the annual value of £30 each. Three of these Scholarships were available the present year, but we regret to say that only one has been taken. We trust that our farmers will ponder this circumstance, and, in these prosperous times, will be disposed to give their sons the opportunity of enjoying the great advantages which the University offers them, in common with all other classes of the community.

#### RESIGNATION OF PROFESSOR LOW.

Professor Low, after having occupied the Chair of Agriculture in the University of Edinburgh, for nearly a quarter of a century, has, we regret to learn, found it necessary, on account of bodily infirmities, to resign that important situation.

Mr. Low has been distinguished for a number of years as an accomplished and trustworthy writer on practical Agriculture. His "Elements," which comprise the substance of his college lectures, have gone through several editions, and his treatises on the Management of Landed Property, and the Domesticated Animals of the Farm, rank among the highest standard publications of British agricultural literature. The larger edition of *Farm Animals*, published several years since, at a very high price, is a work of great artistic merit, containing highly finished colored engravings, on a large scale, of the justly celebrated portraits of farm animals belonging to the Museum of the Highland Society. A copy of this valuable work has recently been added to the library of University College, Toronto. Notwithstanding the high attainments of Professor Low, his class in University, we believe, was never large, a characteristic, unfortunately, of most Agricultural Professorships that have been established. Time, however, will, without doubt, work a gradual remedy, and place agriculturalists, and their noble profession, in their proper position in all our academic Institutions.

Since writing the above, we have learnt from the *Fifeshire Journal*, that Mr. Russell, of Kilwhiss, is a candidate for the vacant chair. This gentleman is already personally known to several of our readers, he having very recently visited Canada. He attended our recent Provincial Exhibition at London, and took an active part as a judge on Implements, and in the public meeting for agricultural discussion. Mr. Russell is at present, we believe, travelling in some part of the United States. The journal above mentioned speaks of his qualifications for the Chair in the highest terms, and a very flattering memorial was got up by the Trafalgar Agricultural Society, of which Mr. Russell has long been the indefatigable Secretary. From our acquaintance with Mr. Russell, during his recent sojourn in Canada, we, in common with many others, formed a very high opinion of his talents and character,—and his Canadian friends will be happy to hear of the success of his application, believing him to be eminently qualified, in every respect, to become a worthy successor to Professor Low, in one of those ancient and national seats of learning in the mother country, of which every true-hearted Briton, in whatever part of the empire his lot may be cast, feels justly proud.

Since the foregoing was in type, we have received the *Gardiners Chronicle* of November 11th, in which it is stated that PROFESSOR WILSON, has been appointed to the Agricultural Chair in the University of Edinburgh; We are not informed what other candidates offered, but from Professor Wilson's high-standing and tried experience in all matters pertaining to the science and practice of Agriculture, his appointment cannot fail of being advantageous and satisfactory both to the University and the Agricultural community.

Professor Wilson acquired his first knowledge of farm practice in one of the best cultivated districts of Scotland, and was for several years the principal of the Agricultural College at Cirencester in England. He had the principal charge of the Agricultural department of the Great Exhibition in London, in 1851. And in

that capacity rendered great service to Canada. Subsequently he became one of the Commissioners appointed by the Queen to the New York Exhibition, and it will be in the recollection of many of our readers that he visited our Provincial Show at Montreal and Hamilton, in 1853.—The Professor is now directing the Agricultural department of the Crystal Palace at Sydenham, and has been selected by the Government to take charge of British Agricultural interests at the Great Paris Exhibition, next year. In each of these capacities he has signified to our Board of Agriculture, his willingness to attend to the interests of Canada.

We abate nothing from what we have previously written in reference to Mr. Russell, in congratulating Professor Wilson, on his new and important appointment, and heartily join with his numerous friends on this side of the Atlantic, in wishing him abundant happiness and success.

#### THE LATE PROVINCIAL FAIR.

We much regret that notwithstanding every possible pains was taken to have the Prize List, in our last issue correct, an omission, through some unwarrantable accident, occurred in the List of discretionary awards in the Fine Arts class. The omission should have been supplied as follows:—

Miss Anne Treadwell, L'Original, County of Prescott: Charts in Illustration of Natural History as presented by the study of Geological eras, and Geographical divisions of the earth; Diploma.

#### IMPROVED DURHAM STOCK.

We learn that Mr. S. P. Chapman, of Clarkville, Madison Co., N. Y., has several Bull Calves for sale, some of them from first-premium Cows, and all from the celebrated Bull, *Halton*, whose characteristic excellencies are well known in Canada, as he was formerly owned by one of our most enterprising and successful breeders of Short-horns,—the Hon. Adam Fergusson. Mr. Chapman has also for disposal some first-class Heifers and heifer Calves. The prices vary from \$200 to \$600 each. The high character which Mr. Chapman's Herd has already attained, must be well known to the generality of our readers.



## FARM ARCHITECTURE.

Messrs Editors,—I have read the *Agriculturist* with much pleasure and profit for three or four years, and I regret that I did not preserve my numbers more carefully. On looking for the design of a *Farm House* which you gave a year or two since, and which pleased me much at the time, I found some numbers missing which probably contained the object of my search. As I am about to build a *good* house—the old one has done very well so far—I should take it as a great favor, and I have no doubt many of your readers will do the same, if you would give the design of a substantial “Farm House”—stone or brick—in your next number.

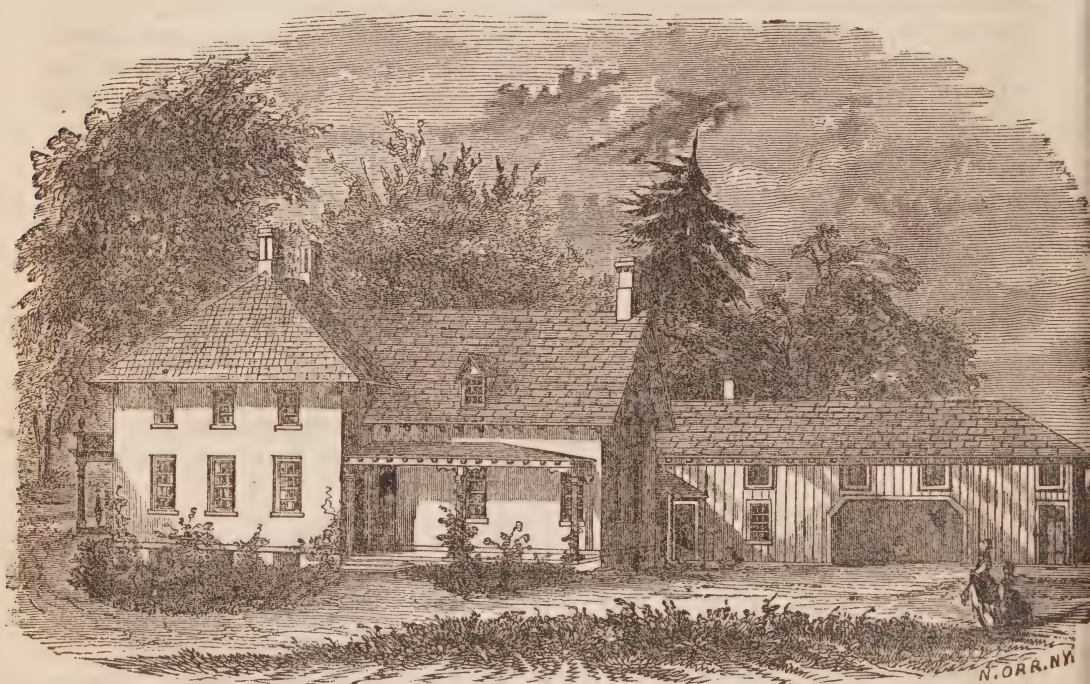
I know pretty well what I want, but the size, proportion of parts and general appearance of a house that *has been* built and proved convenient &c., would help me to decide on the plan.

Yours, &c,

A. S. M.

York Township, Nov. 3, 1854.

We have much pleasure in complying with the request of our correspondent. The design which he will find below is one of the best we have met with, and has not yet appeared in this journal. It is taken from a recent American work on Farm Architecture, and is adapted to make a pleasant “home” for any substantial and well-to-do Canadian farmer, who desires to build one.



A FARM HOUSE.

The above design is that of a comfortable, plain yet highly-respectable stone or brick farm house of the second class, suitable for a farm of two or four hundred acres, and for a family of twelve or fifteen. The style is mixed rural Italian and bracketed, yet in keeping with the character of the farm, and the farmer's standing and occupation.

The main body of this house is 42 x 24 feet on the ground, and one and three quarter stories high—the chambers running two or three feet into the roof, as choice or convenience may direct. The roof has a pitch of 30 to 48° from a horizontal line, and broadly spread over the walls, say two

and a half feet, showing the ends of the rafters, bracket fashion. The chimneys pass out through the peak of the roof, where the hips of what would otherwise be the gables, connect with the long sides of the roof covering the front and rear. On the long front is partly seen, in the perspective, a portico, 16 x 10 feet—not the *chief* entrance front, but rather a side front, practical which leads into a lawn or garden, as may be most desirable, and from which the best view of the house is commanded. Over this *peak* is a small gable running into the roof, *up* in which is a door-window leading from the *gable* per hall on to the deck of the porch.

has the same finish as the main roof, by brackets. The chamber windows are two-thirds or three-quarters the size of the lower ones; thus showing the upper story not full height below the plates, but running two to four feet into the gable. The rear wing, containing the entrance or business front, is 24 x 32 feet, one and a half stories high, with a pitch of roof not less than 35°, and spread over the walls both at the eaves and gable, in the same proportion as the roof to the main body. In front of this is a porch or veranda eight feet wide, with a low, hipped roof. In the front and rear roofs of this wing is a dormer window, to light the chambers. The gable to this wing is bold, and gives it character by the breadth of its roof over the walls, and the strong brackets by which it is supported. The chimney is thrown up strong and boldly at the point of the roof, indicating the every day uses of the fire-places below which, although distinct and wide apart in their location on the ground floors, are drawn together in the chambers, thus showing only one escape through the roof.

The Wood-house in the rear of the wing has a roof of the same character, and connects with the long building in the rear, which has the same description of roof, but hipped at one end. That end over the workshop, and next the wood-house, shows a bold gable like the wing of the house, and affords room and light to the lumber room over the shop, and also gives variety and relief to the otherwise too great sameness of roof-appearance on the further side of the establishment.

We shall not attempt to describe interior arrangements, as these may be varied to suit the taste of the individual. The cost of a well finished house of this size, stone or brick, will not be much short of £750. Much however must depend upon locality, cost of materials &c.,

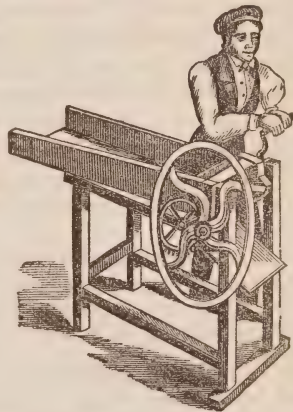
BROWN'S SEED-SOWER.



A new seed-sower has just been brought out by Mr. Brown, the inventor of the straw-cutter referred to below. It is a very ingenious contrivance, and is said to answer completely the purpose for which it is designed. It consists of a long narrow box, open at the top, with a perforated tin bottom. A thin piece of wood, notched at the edges covers the bottom on the

inside, and is operated back and forth by a handle, as seen in the cut. The grass, or clover seed, for which it is mainly designed, is deposited in the box, above the moveable slide which covers the holes in the tin bottom. It is then carried before the sower by a strap passing over his shoulders, and as he moves forward he operates the slide with his right hand, which causes the seed to fall through the bottom evenly to the ground. The apparatus is light, and being eight or ten feet in length enables a man to sow small seeds very fast, and much more evenly than can be done by hand. By a slight modification it is adapted to Turnip seed not intended to be sown in drills. For new land which is generally unsuited to the drill system, this machine will, we think, prove useful. The price will be from \$4 to \$5.

A NEW STRAW CUTTER.



Mr. John Brown, a practical mechanic of this city, thinks he has made some important improvements in the Straw-Cutter. There is probably no farm machine that has undergone so many modifications, and assumed so many different shapes as this. But of the multitudinous "improvements," few seem to have given perfect satisfaction. There is still room for more. The above cut does not give a representation of the particular improvement Mr. Brown claims to have made, and for which he has obtained a patent. It consists principally in the mode of applying and adjusting the knives. One, two, three, or even four knives can be attached to the revolving frame. Two will pro-



bably be found sufficient as the motion is rapid. The knives are adjusted by two screws at each end in a very safe manner. They are arranged spirally, the diameter of the circle they describe being about 8 inches. The gearing is very simple and being all attached to the cast-iron frame which forms the mouth of the feeding-box is not likely to get out of order. The chief merit of the improved machine is its *durability*. The price is \$20.

#### MR. SHERIFF TREADWELL'S PREMIUMS.

Mr. Sheriff Treadwell, of L'Original, late President of the Prescott County Agricultural Society, and at present President of the Provincial Agricultural Association, having very generously offered One Hundred Dollars, to be distributed in the County of Prescott, in the Townships of East and West Hawkesbury, Longueuil and Caledonia, viz.,—£5 to the best cultivated farm, and £1 5s. to the best garden. The conditions were published in the *Agriculturist* for August last. These premiums have been awarded, and the following is a report by Mr. Alfred Cass, one of the successful candidates, as to the way in which he manages his farm. Amongst the gardens, that of Mr. William Walker was very worthy of notice. In writing to the President, Mr. Cass says:—

L'ORIGINAL, 11th Sept., 1854.

SIR,—Having been often and strongly solicited to give you some account of my experience as an agriculturist, permit me to make the following remarks:—

My farm, which consists of 300 acres, is partly cleared and partly under wood. I have about 200 acres of clearance, two-thirds of which are annually cultivated, while the remaining one-third is set apart for grazing. I use the iron Scotch plough and the Scotch harrow, which I consider preferable to all others. As early as possible in the fall, I commence ploughing, so as to allow all foul seeds to germinate before the frost sets in, and also to afford sufficient time for the decomposition of stubble, and other vegetable substances contained in the soil. A second ploughing in the spring thoroughly cleanses the land, and prepares it for sowing. On clay soil I sow wheat; on loam, sand or gravel, oats and corn, with potatoes, or any other of the root crops that may seem suited to the soil. Various kinds of wheat have been introduced into this country, and tried thoroughly, but, so far as my experience goes, the Black Sea is the only kind upon which dependence can be placed. It is suited to a great variety of soil, and is not liable to rust, a quality from which no other kind is ex-

empt; consequently, late sowing may be followed with success.

The root crops I consider as indispensably connected with the farm stock generally. In the management of milch cows, especially when confining them to dry fodder, greatly augments the quantity and quality of the milk, and materially tends to facilitate digestion. The objection to the root crop is the difficulty and expense attending its culture; but this objection may be greatly obviated by a proper use of implements, and a due selection of a suitable soil. My method is as follows:—I choose land of a light loam, manure light, plough not less than three times, and drag twice. I make no drills with the plough, but leave the surface perfectly level. I then employ Emery's seed-sower and drill-harrow, by which the work of ten men may be done by one. I sow 2½ lbs. of turnip seed to the acre, a quantity far too much but for the ravages insects make upon the plants in the early stages of growth. The first hoeing I allow them all to remain. In the second hoeing, I thin them if necessary, leaving the most healthy and thrifty generally about eight inches apart, and even a greater distance if the soil is very rich. In feeding out I clean them well, and then use Emery's vegetable-cutter, with which one man can cut in fifteen minutes as many as will suffice for fifteen or twenty cows. Thus the crop is raised and disposed of with the greatest economy in time and labor. My treatment of beets and carrots is exactly similar. I generally sow from thirty to thirty-five bushels of wheat, yielding on an average from ten to fifteen bushels of seed. I sow about the same quantity of oats, with about the same average yield. I cut from forty to sixty tons of hay, and, notwithstanding its high price, I find it more advantageous to consume it on the farm; for it must be borne in mind that a farm drained of its produce, without a due return being made by the application of manure, will ultimately become exhausted and worthless. Throughout the winter I keep my cattle stalled, and, having water and everything necessary for their accommodation within the stable, the least possible amount of labor is required for their care. From my stock of cows I have made this season 2,000 lbs. of cheese, worth 6d. per lb., and about 400 lbs. of butter, worth 10d. per lb., besides keeping 12 hogs in good condition from the refuse of the Dairy; so that I consider myself amply remunerated for feeding hay to my cattle at \$16 per ton. I have not kept Debt and Credit, as deemed necessary by you, but I think it a matter of high importance, as it would serve as a compass to show us where we are.

I employ implements of various descriptions to save manual labor, such as corn-sheller, hay-cutter, seed-drill, hay-rake, and numerous other articles, with which the labor of the farm is greatly facilitated, and its produce raised at the least possible cost. My wood land consists chiefly of maple, from which I manufacture yearly about 1½ tons of sugar, which I consider to be a small item of profit. I also cultivate forest trees of various descriptions, with very good success.

The following is the statement, somewhat condensed from the original, of Mr. JAMES P. WELLS, whose farm was considered one of the best :—

VAN KLEEK HILL, 13th Nov., 1854.

DEAR SIR,—I feel that your very laudable endeavors, to promote our agricultural interests, clearly entitle you to be placed in possession of the most correct data that can be furnished of the farming operations throughout the country.

The quantity of land comprising my farm is 95 acres. I have, however, under lease an adjoining farm, which has been appropriated exclusively to pasturage. These 95 acres are divided into 9 separate fields, beside an orchard plot of 2½ acres, the whole being well fenced, partly with stone walls and partly with cedar rails, and I have several hundred rods of under-draining and open-ditching. The quantity of land cultivated, or rather under crop, this year, is about 90 acres, appropriated as follows, viz. :—23 acres of spring wheat, partly of a variety from the neighborhood of London, England, and partly of Black Sea—averaging much alike, say, 26, 28 and 30 bushels per acre in these separate fields, producing about 646 bushels, or an average on the whole of 28 bushels per acre, which is considerably below that of some former years, the largest having been in the year 1852, which was a fraction over 35 bushels per acre, and the general average has seldom been less than 25 bushels for a long term of years. In oats, this year's average is far below that of former years, say not over 40 bushels per acre, in place of about 60 formerly. The quantity of land sown to this crop was about 30 acres; the produce therefore will be about 1,200 bushels. In root crops, I have not attempted to do much this year, there having been only about four acres in all, say potatoes, turnips, carrots, and mangel-wurzel: the yield of the different crops upon this limited scale has been satisfactory, although my potatoe crop, being about 100 bushels per acre, is very much below the average of former years, owing to late planting and drought: the yield, however, of carrots and mungel-wurzel is more satisfactory, and although my operations in these articles are almost too limited to bring under your notice, still the result may serve as a sort of *earnest* to induce larger undertakings. About one-fourth of an acre was sown to carrots; the produce being 340 bushels, would give an average of about 60 bushels to the acre; they were of the long orange variety. The plot allotted to mangel-wurzel contained only about 10 rods of ground, and the produce was 60 bushels, giving an average of 960 bushels: this crop appeared to suffer more from the drought than did the carrots, and in an ordinary season for rain, there would in all probability have been a much larger yield, say 50 per cent. increase.

My hay crop has been good. I had 30 acres of grass, and the produce was fully 70 tons of excellent hay (or upwards), being an average of 2½ tons per acre, a portion however producing a much larger yield, say upwards of 3 tons per acre: this was a seven-acre field, which pro-

duced by estimate some 23 or 24 tons of hay, being the first crop after seeding it down. The remainder of the 90 acres cultivated this year was planted with Indian corn and peas, the latter a fine large variety, from the western part of the Province, these crops producing a fair return.

My stock of horned cattle and horses is as follows, viz. :—

15 milch cows, 13 steers (3 to 6 years old), 12 head of young cattle, 40 in all, being of the common breed of the country.

4 team horses, 2 carriage ditto.

1 brood mare, 3 colts, of one, two, and three years old.

My farming work, you are doubtless aware, is principally carried on by *paid* labor. The amount of capital invested in cattle and implements of work generally averages about £500; and at this season of the year, before disposing of the season's products, my farming business involves a capital of about £1,000 or £1,100 currency, exclusive of the value of the land in cultivation.

It would perhaps be a subject of some curiosity to you to know how my "paid labor" farming appears in its results on the Profit and Loss sheet, sustaining as it must needs do the charges of labor, expense of implements of work; and my farming account is debited regularly with the rent of my farm: and on this subject I will merely say that it would also be a subject of curiosity, but of some anxiety to myself, did not my ledger annually exhibit the true state of the matter, and it serves to relieve me on this point.

The recapitulation of the several products of the 90 acres appropriated to their cultivation, would be as follows, and I attach what I believe may be taken as their current valuation, viz. :—

23 acres of wheat, producing 646 bushels, at 8s. per bushel, amounts to.....	£258	8	0
30 do do oats, do. 1,200 bush., at 2s.....	150	0	0
7 do do producing about 300 bushels of root crops, and about 50 bus. Indian corn and peas, worth.....	87	0	0
30 do in grass, producing 70 tons (or over) of hay, now selling at \$12 per ton.....	210	0	0

90 acres. To which may be added the use of cows, ground, of young cattle, improvement of soil, &c., &c., would give at least.....

	62	10	0
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Making an aggregate, as the total production for the cultivation, of.....£748 8 0

It would give me pleasure to go into some other particulars, such as the fattening of cattle, manuring, &c., but my time will not permit. On the subject of manuring, however, I will add that for a long term of years, I have manured my farm freely with leached ashes, combined with barn-yard manure, and I am fully convinced that the former is of great value to grain crops, but I have not experimented with much satisfaction on its application as a top dressing for grass land, or in its use in manuring root crops. From the foregoing hastily drawn up and rather ill-arranged



memoranda, you may perhaps gather something that may assist you to form an opinion of what could be accomplished under more favorable circumstances. Wishing you a great measure of success and personal satisfaction on the result of your efforts to bring our County into notice as to its agricultural value,

I remain, Dear Sir,

Your very obedient servant,

(Signed) JAMES P. WELLS.

Charles P. Treadwell, Esq., &c., &c., &c.,  
L'Original, C. W.

POTATO DIGGER.—The letter of Mr. W. W. Waite, and an article in reply, is unavoidably postponed. It will appear in our next issue.

#### DEATH OF MRS. THOMAS.

We deeply regret to announce the death, since our last issue, of this esteemed lady. She died shortly after giving birth to a son, and has left a void in the ranks of Canadian female writers that will not soon be filled. She had undertaken to supply a series of articles for this paper on Education, Health, Familiar Chemistry, and kindred subjects, for which she was well qualified, but she has been summoned away in the midst of her work. Our readers as well as ourselves have sustained a loss. For she was a pleasant, judicious, and skilful instructor. Mrs. Thomas was a native of the adjoining State but had resided for some years at Brooklin, in the Township of Whitby,

#### WINTER EVENING STUDIES.

Winter is again upon us. Admonished of its near approach, by threatening clouds, and winds, and storms of rain and snow, it is appropriate, and will not be unprofitable, we hope, to present some of the advantages which may be enjoyed during that season; not indeed by all, for some occupations will permit of being carried forward within doors, by night as well as by day. But to those engaged in other pursuits, winter, comparatively, is a period of repose. During the day-time, it is true, industry will keep busy the willing hand; but the days are growing shorter and the nights are lengthening; and the evenings of winter almost every man may have at his own control.—At the close of the day, when the burdens that have been manfully borne are cast down until the next return of morning, the laboring man, beneath his own roof, should feel himself independent of the necessities that may have been imperiously demanding his attention and strength, and should devote his evenings to rational amusement and study, at home. Were we to enter upon a calculation of the number of hours which each might thus save from running to waste, which he might devote to the cultivation of his own mind, and to the improvement of his family, it would be found that the general sum amounts to no inconsiderable portion of a life time. Let our readers

should they be curious in this matter, figure it up for themselves, assuming as the basis that the average duration of life, after twenty-one, is thirty years, and that for four months in the year there are daily two hours of evening; they will then ascertain that the period which might be devoted to the purpose we have suggested, will comprise one-thirtieth part of the active and most valuable portion of our lives. During the long winter evenings, if a man should resolutely apply himself to the reading of useful books, which are almost too common to be prized so highly as they ought, how much valuable information might be gathered and treasured up; and if he should read aloud, a most commendable practice, in our opinion, at the fireside, the benefits would be conferred, in most part upon all the members of the household. Wherever this method of spending the evenings has been adopted, there has been created, if it did not exist before, a taste which can appreciate the delicate pleasure that flows from contact with the brightest thoughts and noblest sentiments of the great master minds that illuminated the world. And it also will be found that, amongst those who pursue this course, there is a growing disrelish for the baser gratifications, so nearly akin to vices, to be found in bar-rooms and saloons, at the card table, and in loud, boisterous and unmeaning mirth; and that, in the family circle, the congeniality of feeling, the correspondence of manners, and the affectionateness arising from exalted sympathy are much strengthened: so that home becomes to a man the most attractive place on earth. Whoever will adopt this plan of winter evening studies, and persevere in it, although it may at first be irksome, and for a while dull, will ere long discover coming to his aid one of the most valuable mental habits which it is possible to form; as the accustomed hour draws near, his mind will turn eagerly towards his books in search of that companionship which is to be found in the printed page alone—a companionship with the most powerful intellects in the moments of their inspiration. The privilege which is thus conferred upon the studious is invaluable. Who would not esteem himself happy could he but sit down for an hour with Plato, or Bacon, or Franklin, and with Shakspeare, or Milton, or Wordsworth? And yet, gratifying as that might be, what would the instructiveness and interest of a mere casual conversation amount to, in comparison with the deliberate unfolding of the very heart, the laying open of the rich treasures of wisdom, which is made in the writings of these distinguished men? After pursuing awhile this plan of reading evenings, the mind will gradually become accustomed to carry with it into the workshop and into the field the acquaintances which have been made in books, and, whilst wielding the hammer, or drawing the thread, or following the plow, will busy itself with reflections upon matters of solid and enduring interest, and will not, as we fear is too often the case with laboring men, remain unoccupied, a temple without a shrine, or, what is worse still, indulge in loose and corrupting visions, which can but deprave and destroy it.



















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